

DENVER BOTANIC GARDENS
909 York St.
DENVER 6, COLORADO



The Green Thumb

Magazine for Rocky Mountain Gardeners



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FLOWERS
MORE AGAIN
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ALL-AMERICA
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GARDENS—
PROGRESS IN
1959
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JAN.-FEB.,

1960

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JAN.-FEB.

Vol. 17

No. 1

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The Green Thumb

Colorado Forestry and Horticulture Association

Organized in 1884

"To preserve the natural beauty of Colorado; to protect the forests; to encourage proper maintenance and additional planting of trees, shrubs and gardens; to make available correct information regarding forestry, horticultural practices and plants best suited to the climate; and to coordinate the knowledge and experience of foresters, horticulturists and gardeners for their mutual benefit."

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The Colorado Forestry and Horticulture Association

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909 YORK ST.

DENVER 6, COLORADO

Calendar of Events

Colorado Forestry and Horticulture Association Annual Banquet and Business Meeting, February 1, 6:30 p.m., American Legion Post Number 1, 14th and Broadway. See bottom this page for details.

House Plant Clinic, 7:30 p.m. to 9 p.m., February 15, 22, 29, March 7 and 14, Botanic Gardens House, 909 York Street. See page 10 for details.

The Green Thumb Program. Every Saturday morning on KLZ at 10:15 a.m.

Floral Art Courses: Opportunity School. Every Thursday 9 a.m.-11:30 a.m., 1 p.m.-3:30 p.m., 6:30 p.m.-9:15 p.m. There is no charge except for materials.

Colorado Gladiolus Society Bulb Auction. February 23, 7 p.m., at Botanic Gardens House, 909 York Street. Many varieties to choose from. Public invited.

BOTANIC GARDEN'S HOUSE MEETINGS

909 York Street

January 22—Men's Garden Club
Denver, 7:30 p.m.

January 28—Civic Garden Club,
p.m.

February 2—Mountain View Garden
Club, 1 p.m.

February 3—Women's Faculty Club
Denver University, 1:30 p.m. Botany
Club, 7:30 p.m.

February 8—Judges Council, 10 a.m.

February 9—Evergreen Garden Club
7:30 p.m.

February 10—Organic Gardeners,
p.m.

February 11—Division B, Civic Garden
Club, 12 noon. Rose Society
7 p.m.

February 12—Colorado Forestry and
Horticulture Finance Committee
10:30 a.m.

Colorado Forestry and Horticulture
Board Luncheon, 11:30 a.m.

February 13—Men's Garden Club
Colorado workshop, 9 a.m. to 4:30
p.m.

February 25—Civic Garden Club,
p.m.

March 1—Mountain View Garden
Club, 1 p.m.

March 2—Botany Club, 7:30 p.m.

ANNUAL DINNER AND BUSINESS MEETING

THE COLORADO FORESTRY AND HORTICULTURE ASSOCIATION

MONDAY EVENING, FEBRUARY 1, 1960

Cocktails at 6:30 P.M. — Dinner at 7:00 P.M.

American Legion Leyden-Chiles-Wickersham Post No. 1

1370 BROADWAY — Parking Available

Dr. Richard D. Beidleman, Associate Professor of Zoology, Colorado
College, will present a talk on "The Changing Flora of the Front
Range." Illustrated with colored slides.

\$3.50 (Tax and Tip Included) Cocktails Extra



Rocket Snapdragons, 1960 All-America winners.

COLORADO FLOWERS SCORE AGAIN

By JAMES C. LLOYD

Public Relations

THE 1960 AAS award winning Rocket Series Snapdragons and two new Petunia introductions developed by Pan American Seeds, Inc., of

Paonia, Colorado will be of special interest to gardeners of the Rocky Mountain Area.

All six varieties of the Rocket Series

received AAS awards for 1960. The Silver Medal went to the Red Rocket, each of the other five received a Bronze Medal. The Rocket Snapdragons were the highest scoring entrants in the 1958 Trials and consisted of a series of six separate colors of F₁ Hybrid Maximum Grandiflora or Colossal types. The series consists of: Red Rocket, Yellow Rocket, Rose Rocket, White Rocket, Bronze Rocket, and Orchid Rocket. As each member of the Series received an award, seed bearing the AAS seal will be offered both as a mixture and as separate colors.

Being the first F₁ Hybrid garden type Snapdragon to be introduced, the Rocket Snapdragons are far superior to any other garden Snapdragons yet offered. Although grown as F₁ Hybrids from hand pollinated seed, the seed is expected to be plentiful. Also, since they are F₁ Hybrids, each and every variety is very uniform. There is some difference in time of bloom between the different colors but the six varieties are quite well matched and hence make a good blend or mixture. The Rocket Snapdragons are of the tall later blooming type and this characteristic is enhanced by their great hybrid vigor. Young plants are very strong and sturdy and selfbranching, although pinching is recommended for a larger number of basal branches. The plants grow tall and stately and the spikes are borne on long straight stems. The flower spikes are long and graceful, resulting in florist quality cut flowers. The home gardener will prize these for their usefulness for cutting.

For home garden culture, Snapdragons are best grown from well grown, cold hardened, pinched plants, set into the garden as soon as the ground can be worked. All Snapdragons are hardy and will withstand several degrees of freezing. In fact, they do bet-



Maestro Petunia.

ter if given a chance to get well rooted before the warmer days of spring.

One of the new Petunia introductions is the F₁ Hybrid Grandiflora Maestro. This is a new rich bright rose-red Grandiflora fringed Petunia. The flowers are 3½ by 3¼ inches across on compact well branched plants. The foliage is a dark green and the color is a very warm glowing deep rose-red with a yellow throat. This is a very striking addition to the famous Pan American F₁ Hybrid Grandiflora Petunias.

The F₁ Hybrid Multiflora Mercury is the newest addition to the famous Pan American Space Age Petunias. The color is the nearest to blue yet being a very soft and clear shade of light heavenly blue. Although somewhat taller than some of the other Multiflora Petunias, Mercury is the most dwarf of the Blues. It is an F₁ Hybrid of the famous old variety "Heavenly Blue" but is much more uniform, both in growth and color and represents great improvement. The habit is compact and branching. The height is from 15 to 18 inches.

1960 ALL-AMERICA SELECTIONS

By W. RAY HASTINGS

THE first snapdragons bred for summer blooming, for long days and short nights and with summer heat tolerance, are now ready for home gardeners. Two and three crops per season from the same plants, with 10 to 12 tall spire-like spikes at a time loaded with bloom, are yours for the planting.

Six prime colors compose the new first generation (F1) hybrid Rocket snapdragon series: Bronze Rocket, Golden Rocket, Orchid Rocket, Red Rocket, Rose Rocket and White Rocket. Each variety is an All-America Selection. And, because they all are award winners, they receive a new class award and the formula mixture of all six colors may be offered as an All-America winner. This is extraordinary. Only the Petite marigolds previously have won a class award.

To make it more of a snapdragon near 'Vanguard' double snapdragon, in rose pink with a golden throat and also an F1 hybrid, is the first double snapdragon to merit an All-America award.

Then, there is an extra large flowering annual phlox in the most desirable and exquisite salmon with enhancing cher eye. This is a vigorous tetraploid, accounting for its larger size and vigorous 12 inch height. It has the most beautiful color of all phlox, deserving its name 'Glamour'.

Marigolds have won a number of awards over the years and plant breeders continue to produce exceptional new varieties. 1960 brings a big orange called 'Toreador' to join this new climax class of F1 hybrids. Toreador an earlier and more prolific bloomer, 1/2 to 3 feet tall with handsome dark green foliage on bushy plants. This class is the carnation flowered type but much larger than carnations and fully double.

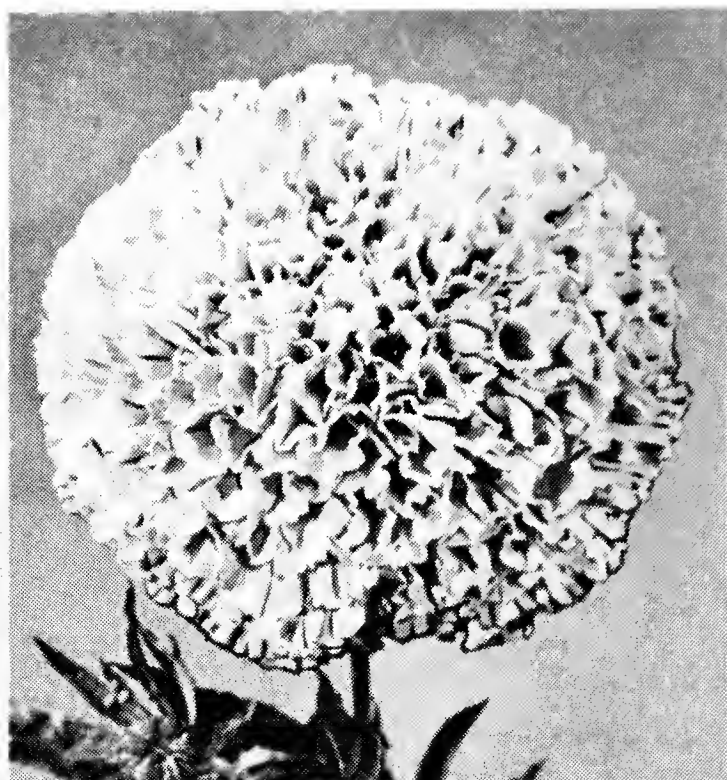
Last but not least of the flower award winners is the 'Spun Gold' marigold. It is open-pollinated, not a true hybrid, and yet comes uniform and true. It practically covers its 12 inch bushy plants with big 3 inch chrysanthemum flowered blooms of brilliant golden yellow. Among the very earliest marigolds to bloom, it is strikingly remarkable how such large and beautifully mum-flowered blooms can be borne on such compact dwarf plants. For low borders, edging, beds and pot plants, Spun Gold is a honey.

The only 1960 vegetable winner is Just Right turnip. Excellent for both plentiful greens, held up off the ground, and for its high quality flattened globe shaped roots of clean white color. This all-purpose variety is the first hybrid turnip. Enormous yields, finest quality leaves for boiled greens and beautiful white roots make it the best turnip yet.

More detailed descriptions of the 1960 winners should intrigue every new and seasoned gardener.

The new 1960 Rocket Series of snapdragons grow to 3 feet in height. Plants branch from the base to produce 10 or more long spires or spikes of flowers at a time. Unlike the short-day, cool weather, greenhouse varieties and varieties previously grown outdoors but which were not very heat or rust tolerant, the Rocket snaps are late, long-day blooming and flower beautifully even in the mid-summer heat of the western corn belt.

Rocket snaps show their hybrid vigor, strong and erect, with well spaced large flowers of the Colossal type on tapering spikes with many open at a time. They are excellent for cutting. After first blooming, stems may be cut back for a second crop and even a



1960 All-America Flowers

Above—Glamour Phlox, Toreador Marigold. Below—Spun Gold Marigold, Vanguard Snapdragon.

third crop has been cut from the same plants before hard freezing weather.

Red Rocket is a little earlier to bloom than the others and has distinctive reddish foliage and stems. Foliage of the other five colors is bright green.

Golden Rocket is a self golden yel-

low with color brightness to be seen over the rest. Bronze Rocket is rich and glowing bronzy tangerine. Orchid Rocket is the ladies' favorite lavender for arrangements as well as for outdoor beauty.

Rose Rocket is a rich rose with



Just Right Turnip.

Golden throat blotch and White Rocket a self white.

Add to these the finest double snapdragon 'Vanguard', rose pink with gold throat markings, growing about 30 inches tall, and blooming earlier than the Rockets, and you will have a garden full of wonderful snaps. Vanguard has base branching with long stemmed spikes for garden or cutting.

Glamour phlox is a new tetraploid mid-salmon color. Extra size flowers are up to 1¾ inches across and are borne in graceful clusters or umbels like pink parasols over the 12 inch plants. They bloom profusely through the summer and fall and can be used for cut flowers or in beds and borders. The flower color is certain to be a gar-

dener's favorite, the most attractive in the phlox family.

Toreador marigold is a bright mid-orange F1 hybrid with deeper appearance at flower center. The color is enhanced in sunlight as well as by artificial light indoors. The fully double flowers are nicely ruffled and the blooming date is somewhat earlier than others of the Climax type. It has extra hybrid vigor, free flowering habit, uniformity of flower form and large flowers about 4 inches across.

Spun Gold marigold is only 10 to 12 inches tall and wide, with dwarf compact bushy form. Flowers to 3 inches practically blanket the shapely bush. Flower form is the popular chrysanthemum type, exceptionally large for such an early bloomer and such a dwarf plant. Although open-pollinated, Spun Gold is true and uniform for beds, edging, low borders and to bloom in pots.

All-America Selections is a non-profit educational institution for the testing, comparison and evaluation of new seed varieties from plant breeders around the world. All new entries, before introduction, are thoroughly tested and compared with the nearest standard varieties in outdoor trial grounds in different climatic and soil conditions over the United States and southern Canada.

The greatest satisfaction in gardening comes with the best and most dependable varieties and kinds of plants to suit our needs and taste. Such are the new All-America Selections.

Janus was invoked at the commencement of most actions; even in the worship of the other gods the votary began by offering wine and incense to Janus. The first month in the year was named for him; and under the title of Matutinus he was regarded as the opener of the day. Hence he had charge of the gates of heaven, and hence, too, all gates, Januae, were called after him, and supposed to be under his care. Hence, perhaps, it was, that he was represented with a staff and key, and that he was named the Opener (Patulcius), and the Shutter (Clusius).

M. A. Dwight—*Grecian and Roman Mythology.*
Janus.

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Annual Plant Auction and Sale



Early in May the cry of the plant auctioneer will ring out again, giving you a chance to buy plants and have fun doing it. Mrs. Alexander Barbour and Mrs. Hugh Catherwood, cochairmen, are busy with plans for this gala affair. They promise an expanded program to include the plant auction, an antique and horrible auction, a bedding plant sales booth and several surprise activities. They ask your cooperation in accumulating a quantity of antiques and horrors for this sale. If you are cleaning out the attic, or know of someone who is, remember that we can use all kinds of do-dads. You may bring them to 909 York, or if this is not possible, call EAS 2-9656 and we will try to make arrangements to pick them up.

HOUSE PLANT CLINIC

Place: Botanic Gardens House, 909 York Street, Denver.

Time: Five consecutive Monday nights, February 15, 22, 29, March 7 and 14
7:30 to 9 p.m.

Cost: There will be a small fee of \$2.00 to cover cost of materials.

Content: Care of plants, soils and potting, propagation, diseases and pests
different types of containers, the large in-door plants, types of plants.

Direction: Under direction of Dr. Helen M. Zeiner.

Registration: Fee accepted on or before January 29 insures a place for you in the clinic. Fee should be mailed or taken to Botanic Gardens House by January 29. If fee is mailed, be sure to include name, address and phone number. Make checks payable to Denver Botanic Gardens.

GARDEN SHORTS

A garden of miniature roses at the Denver Botanic Gardens will be sponsored by the Home Garden Club of Denver, according to Mrs. T. A. White, recently installed president. The clubs' vice-presidents will be Mrs. A. R. Twist Jr., first; Mrs. S. R. Swennes, second; Mrs. Beth Buckley, third; and Mrs. Lillian M. Doty, fourth. Mrs. Raymond A. Yaggy, retiring president, and her husband are moving to St. Petersburg, Fla.

LOOK AND LEARN TOURS

"Designed for Garden Living" is the theme of this year's garden tours. A special committee is now in the process of selecting gardens. Their decisions will be based on design, functional patio areas, and easy maintenance. They have a choice of some 40 gardens suggested by the Landscape Architects Association and the Denver Nurserymen. Tentative dates for this year's tours are July 13 and 14.



HOUSE PLANTS

By LAVICA BONAR

Winter is upon us, but that is no reason for dormant "green thumbs". Raising house plants is one of the plant fancier's answers to winter weather. Most plants are adaptable to household environment, and take what comes without too much complaint. However, a knowledge of your plants' cultural requirements will make their care easier and more rewarding. Here are some of the more common house plants and their likes and needs to aid you in more successful indoor gardening.

Geranium — Requires as much sun as possible. Prefers a moderate (50-60°) temperature. Water only when the soil is dry.

Cyclamen — Requires cool (60° maximum) humid conditions. Water from the bottom to prevent crown rot. Yellowing of leaves often caused by dry air or soil or a location which is too warm.

Impatiens — Plenty of moisture and good drainage are the main requirements. This plant takes indoor living as a matter of course and is almost ever blooming.

Philodendron — Requires light, but not direct sun. Spraying or washing the foliage with water every week is quite beneficial. Don't overwater.

Ivy — A good plant for north windows. Does best under moist, cool

(45-50°) conditions. If these conditions can't be provided, spray or wash the leaves with water once a week.

Coleus — Likes a moist soil, but don't overwater. Needs sun to bring out the leaf colors. Pinching back reduces legginess. Watch for mealy bugs.

Cactus — Water from the bottom only when dry. Keep the plants in a sunny window. Plants which are not in the resting period may require more watering.

Begonia — Overwatering results in leaf drop. Humid conditions are beneficial. Likes partial or filtered sunlight.

Saint Paulia (African Violet) — Likes an east or west window and a minimum temperature of 60°. Is quite adaptable to wick watering, as moisture at the roots is preferable to top watering.

Kalanchoe — Culture same as for Cactus; sunshine and not too much water during the resting period.

Strawberry Begonia—Prefers shade from direct sun, a moist soil, and a temperature of 50°.

Peperomia — Prefers humid conditions and shade from direct sun.

Baby's Tears — Prefers partial shade. The new shoots do not trail far unless in contact with the soil.

WHO'S FOR REJUVENATION?

DR. MORAS L. SHUBERT

*Department of Botany,
University of Denver*



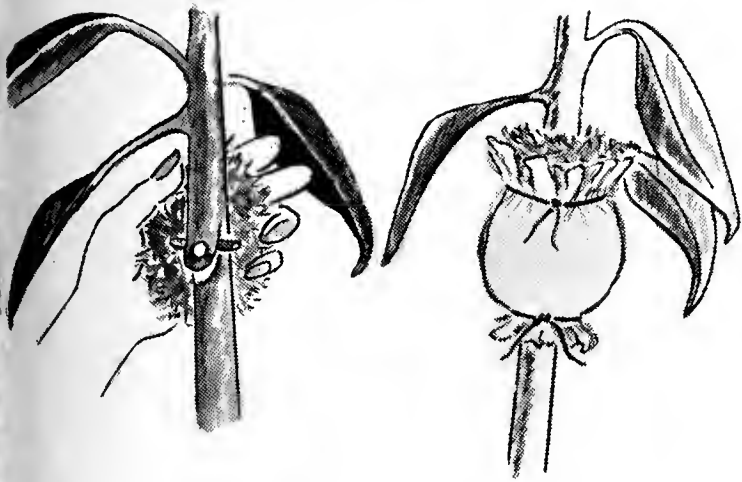
FEW of us, if given the chance, would want to struggle through it all again even though we do complain of advancing age. But still there remains a sort of romantic notion in the back of the mind that it would be nice to be youthful again.

Don't be either hopeful or alarmed, for I am not going to suggest how we can regain our youth, but I am going to discuss how our plants can be made to grow *younger*.

Who doesn't have a senile philodendron, English ivy, geranium, or one of many other species? Any plant that has been standing still in its growth for a very long time needs to be either thrown away or rejuvenated. A plant can remain healthy only through the continuous production of new tissues, and the newly-produced leaves, stems and roots are as young as the day they are produced, no matter how old the plant is. When we marvel at the great age of a California redwood, we must remember that none of the live tissue in a thousand-year-old tree is more than a very few years old. And this potentially eternal life of perennial plants is a quality that we can use in renewing the vigor of senescent ones.

Let's take, as our example, the too-familiar dusty-leaved, dull old "split

leaf" (*Monstera deliciosa*). How did it get into this sad state? We could have kept it "happier" by taking better care of it in the first place by proper watering and fertilization of the soil and by weekly sponging of its leaves with soapy lukewarm water, but we didn't. The oldest leaves are so full of excretory wastes that they are of little use any longer, so let's cut it back to only three or four leaves above the soil. Now since it has been for several years in the same tub of soil we carefully work it out of the container and notice that the roots and soil are much too firmly packed, for the root volume added to the soil volume equals almost more than the tub could hold. So we straighten out the roots and even prune off the poorest ones. Some of the longest roots are shortened by cutting them cleanly with a sharp knife or pruning shears. While preparing the potting mixture we can immerse our whole much-mutilated specimen in a pan of water or else cover it with something wet enough to prevent drying. I like to use medium sand from which the finest particles have been sifted and peat in about equal parts plus some well-rotted compost, if available, for plants of this kind. These plants, in their native rain forests never touch anything like our



Air Layering

Frequently the best treatment with many species is to start a completely new plant by rooting the stem tips. In some cases this can be done most satisfactorily by "air layering". To do this we take a razor blade or sharp knife and cut a notch in the side of the stem at a point where we want the new root system to form. Next we take a large piece of water-proof plastic and tie it firmly around the stem just below this notch in such a way that it can be drawn up around the stem to make an air-tight bag. We fill this plastic with saturated sphagnum and fasten the plastic (not too tightly) above the notch so that the moist sphagnum is held in place for rooting. Depending upon species, this rooting process may take from a few days to several weeks (for something like a rubber tree). The advantage is that the plant will continue to grow and when the new roots are formed (*peeking is permitted!*) we can cut off this top and pot it without any real injury to the specimen to be saved.

soil, so forget about adding garden foam to the mixture. Now when we repot the plant we spread its roots out and slowly add the soil so that there is no packing together of the roots. We water it thoroughly and keep the soil moist, but not water-logged, until the first buds begin to open at the base of the leaves. At this time we give it its first application of mineral fertilizer. We let the soil dry down for several days then add enough soluble fertilizer, such as Hyponex or Rapid-gro to thoroughly moisten the soil. The solution of fertilizer is made up according to the manufacturer's directions for hydroponics, even though we are growing this in our synthetic "soil". If the first leaves that open on our now robust young plant do not have splits, as split-leaves should, we must recall that this is to be expected. Later ones will have characteristic splits.

With geraniums and many other herbaceous pot plants the simplest treatment is to select cuttings and either root them in water and then plant them or else pot them directly in a potting soil that is essentially a rooting mixture. That is, the mixture should be quite a loose one for good moisture and air storage. Geranium cuttings will be less apt to rot if they are allowed to lie where the sun can shine on the cut ends for a couple of hours and dry the wound.

Since plants that originate in the rain forests, like philodendrons and rubber trees, are favored by higher humidity than we usually have in our homes, we can make a very good use of some of those clear plastic suitbags from the cleaners by making plastic tents over such plants temporarily. This will help give repotted plants a better start, but do not keep the bags too tight as to get moisture condensation inside.

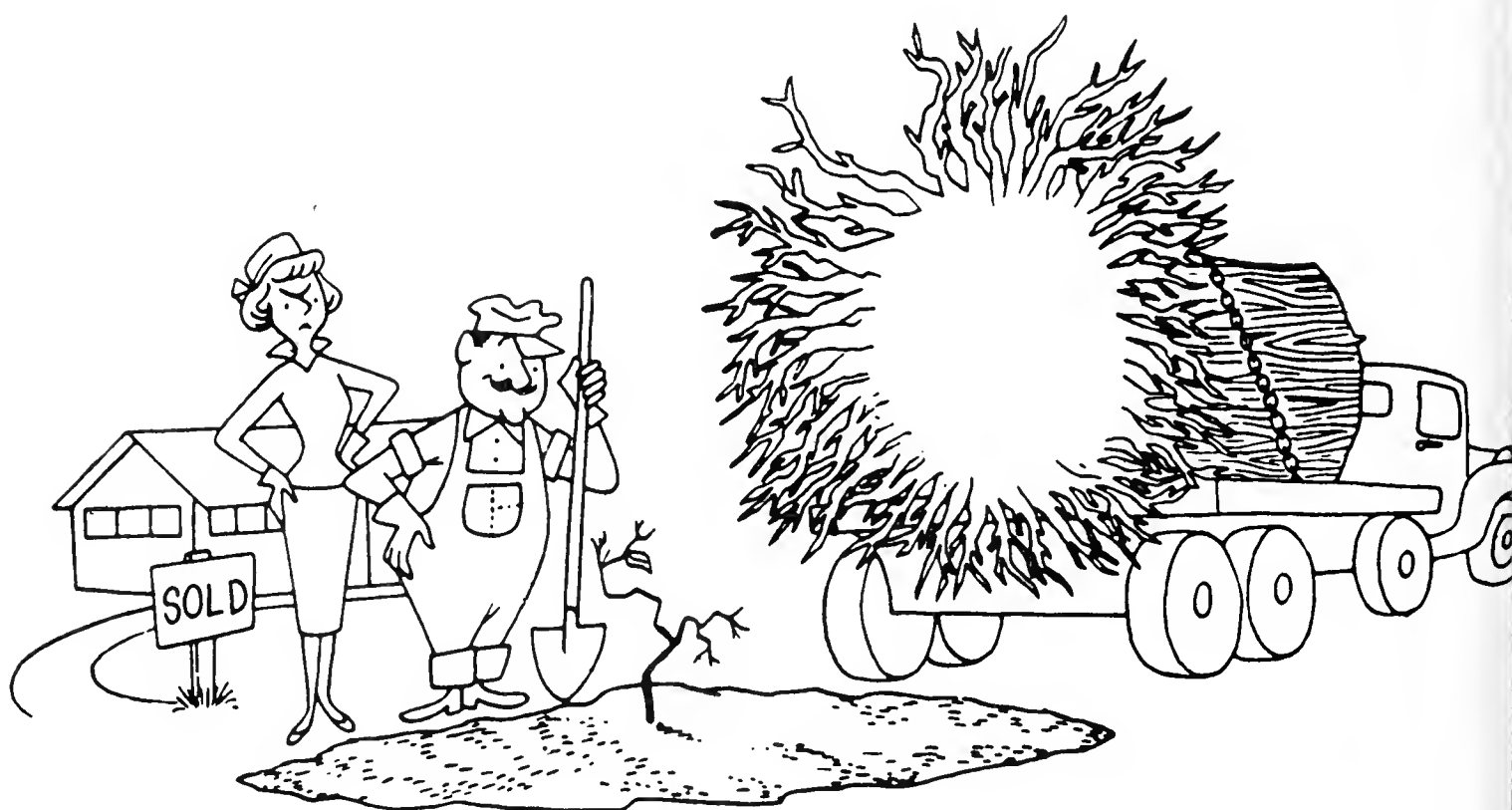
After the cuttings are growing on their own new roots in new potting soil, give the plants an adequate supply of mineral fertilizer to encourage robust new growth. It is worth remembering that the recommendations given here are for plants that should have been kept in healthier condition in the first place, so next time, we resolve, we will take vigorous cuttings sooner.

COLORADO NURSERYMEN'S AND ARBORISTS' SHORT COURSE

Colorado State University, Fort Collins, Colorado

February 8 and 9, 1960

Planned to keep our nurserymen and arborists abreast with new developments in their fields, this year's short course promises to be the best yet. Scheduled talks include "Small Trees and Dwarf Shrubs," by Donald Wyman, Director of Arnold Arboretum; "Repair and Care of Storm Damaged Trees," by Homer L. Jacobs, Vice President of Davey's Tree Company; "Credit Safeguarded," by Arthur Thompson, Credit Manager, Neusteters; "Countdown in Salesmanship," by Tom Hopkins, California Spray Chemical Corporation. These talks, along with others, promise two full days of exciting news in the field of horticulture. While intended primarily for the professional, the sessions of this short course are open to anyone interested. Registration is at 9 a.m., Monday, February 8, in the Student Union Annex, Colorado State University, Fort Collins, Colorado.



Builders who destroy fine old trees, then plant spindly new ones

THE LADIES SPEAK THEIR MINDS

Of interest to horticulturists are some of the opinions expressed by the 100 women delegates to the 2nd Annual Congress on Better Living for 1959.

The Congress is designed to aid persons and firms who perform service for American families by informing them of the families' desires as affected by the pattern of living.

Because of the trend to outdoor living, patios have become as important as closet space.

The American family wants to be able to see their yard, even when they can't be outside. This desire resulted in a major complaint against windows placed too high for convenient viewing.

Another complaint, dear to the hearts of many, was against contractors who unnecessarily remove mature trees in order to plant new ones.



Denver Botanic Gardens-Progress in 1959

By DR. A. C. HILDRETH, *Director*

The year 1959 was a period of great progress in the development of the Denver Botanic Gardens. The house at 909 York Street had been transferred to the Denver Botanic Gardens Foundation on December 16, 1958, however, it was March 8, 1959, before actual possession was obtained. On March 9 the Colorado Forestry and Horticulture Association moved their offices and the excellent Helen Fowler Library into the building. A week later, March 16, the Denver Botanic Gardens vacated their rooms in the Denver Museum of Natural History Building and moved into their new home. On April 3, the Federation of Garden Clubs established an office in the house. Thus the headquarters of these three related agencies were all housed under the same roof.

On June 11, Botanic Gardens House was formally presented to the Denver Botanic Gardens by Dr. and Mrs. James J. Waring, in memory of Mrs. Waring's father, Henry M. Porter. Botanic Gardens House was made available to all botanical and horticultural organizations for meetings, conferences, study classes and displays. Almost every day some group used the

main salon, the dining room or the conference room and sometimes two or three meetings were in progress simultaneously. The facilities for such group activities have been gradually improved during the year. Mrs. James J. Waring donated the beautiful furniture and carpet for the conference room, and also linens, silverware, dishes and glassware for the dining room. Folding chairs and folding tables were purchased for use in the auditorium room or wherever needed. The Colorado Forestry and Horticulture Association recently received a donation from Mr. C. Edgar Adelhelm of a slide projector and a 16 mm. motion picture projector with sound track. The Association generously makes this excellent equipment available to any botanical or horticultural group meeting at Botanic Gardens House.

During the year, extensive developments were made in the 18-acre tract adjacent to Botanic Gardens House. More than 19,000 cubic yards of earth were moved in the initial grading. An underground irrigation system was installed for the entire area. The property west of York Street and the children's garden area between York and

Josephine Streets were enclosed by fencing. For this purpose were erected 2,755 lineal feet of chainlink fence, 6 feet high; 425 feet of ornamental iron fence, 6 feet high and 360 feet of ornamental iron fence 4 feet high. In these fences, five chainlink gates and five ornamental iron gates were installed. The attractive gates at the main entrance were donated by Mrs. Stella Durrance.

Stone-faced walls and stone-faced gate pillars erected contain a total of 3,266 square feet of masonry. In the driveways and parking areas 7,777 square feet of concrete paving and 32,288 square feet of asphalt surface were laid. In addition 2,422 lineal feet of concrete curbing and 270 feet of reinforced concrete retaining wall were constructed.

For pedestrian traffic there were laid 7,264 lineal feet of gravel walkways, 10 feet wide; 311 lineal feet of brick walk, 8 feet wide; 2,424 square feet of flagstone paving and 1,292 square feet of concrete walk.

Ornamental floodlighting was installed on the main entrance gates, the Denver Botanic Gardens sign and the exterior of Botanic Gardens House. These lights give a beautiful effect at night and also provide some protection against vandals and pilferers.

Basic equipment acquired during the year includes a tractor with necessary soil-working implements, a pick-up truck with dump body, a roto-tiller and miscellaneous hand tools. The pick-up truck was donated by the Men's Garden Club of Denver.

By early autumn, enough of the basic construction at the York Street site had been completed to permit operation of this area as a botanic garden. Therefore, on September 19, this unit of the Denver Botanic Gardens was formally dedicated to the public with appropriate ceremonies.

During this period of concentration on construction it was not forgotten

that plants are the all-important feature of a botanic garden. As soon as the soil could be prepared in the spring of 1959, an extensive planting of annual flowers was made along the front of the property bordering York Street. The Park Floral Company of Englewood, Colorado, generously donated its services and greenhouse space for starting the 7,300 plants used in this planting.

A collection of rose varieties was presented by Jackson & Perkins Co., Newark, N. Y., Conard-Pyle Co., West Grove, Pa., Howard Rose Co., Hemet, Calif., and Armstrong Nurseries, Ontario, Calif. These were planted with the assistance of the Denver Rose Society.

In late summer and early fall the American Iris Society, Region 20, donated and planted a fine collection of iris species and varieties. Mr. Jack N. Withers donated and planted a collection of *Hemerocallis* varieties and hybrids. Gilbert H. Wild and Son, Sarcoxie, Mo. contributed 25 varieties of peonies.

Over 14,000 bulbs consisting of tulips and crocus, were received and planted this fall. These represent gifts from several donors including the Denver Dry Goods Company, Simpson Seed Company, Rocky Mountain Seed Company, Green Bowers Nursery and Mrs. N. R. Knox, all of Denver, and Associated Bulb Growers of Holland and Inter-State Nurseries, Hamburg, Iowa. Barteldes Seed Co. of Denver gave a collection of lily varieties and Mrs. Grant Fitzell, also of Denver, gave some hardy *Amaryllis* bulbs. For some experiments on overwintering canned roses, W. W. Wilmore Nurseries contributed over 400 canned rose plants.

In the City Park Unit the old plantings were maintained and some new additions were made. Mr. S. R. DeBoer donated six more ornamental crabapples for his already extensive

collection. Long's Gardens, Boulder, Colo., donated 2 varieties of Iris and 1000 Gladiolus corms comprising 10 varieties. The Gladiolus planting was designed and set out by the Gladiolus Society. Fifteen additional rose varieties totaling 127 plants were set in the rose garden the past spring. These plants were contributed by Melvin E. Wyant, Rose Specialist, Inc., Mentor, Ohio, and the Jackson & Perkins, Concord-Pyle and Armstrong's nurseries previously mentioned. An additional 69 rose plants purchased locally were set as replacements.

Some improvements were made in the Alpine Unit on Mount Goliath. The U. S. Forest Service erected a large, rustic sign near the road at the

upper end of the trail, identifying the area as a unit of the Denver Botanic Gardens. Plastic-covered signboards on which will be given information about plants and other natural features along the trails, were donated by Dr. John R. Durrance. These will be set in place next summer.

Much of this development was made possible by contributions received during the year. One hundred sixty-five donors gave \$90,396.10 to the Denver Botanic Gardens in cash and pledges. These contributions came from various commercial firms, foundations, horticultural organizations, and private individuals. It is regretted that space does not permit publication of the names of all these donors.

COOPERATION AT ITS BEST

Never in Denver's horticultural history have we had such pleasant and important collaboration between the various clubs and other agencies promoting gardening. The latest example is that of our Colorado Forestry and Horticulture Director, Patrick J. Gallavan, being elected to the presidency of the oldest men's garden club of Colorado called Men's Garden Club of Denver.

There was a time, in the tragic past, when some garden clubs thought of the Colorado Forestry and Horticulture Association as a competitor for membership. Now we all feel that we can do best by working together in perfect harmony. The number of garden club members who are taking advantage of the special club-membership in the over-all organization, has grown fast in the last few months, and still is growing. It is an encouraging sign!

Other examples? The County Agent's office cooperates in perfect harmony with all these organizations. So does the City Forester's office. So does the Botanic Gardens Association.

For the first time we have offices of the Colorado Federation of Garden Clubs and of the Colorado Forestry and Horticulture Association in the Botanic Gardens Building. For the first time there is almost continuous garden activity in the headquarters building: garden shows, meetings, conferences, horticultural visitors, teas, parties, lectures. Notice elsewhere the many programs going on. And stop in to see it with your own eyes!

Who profits? Everybody interested in gardening, botany, conservation, flowers, trees, shrubs, evergreens, greenhouses!

If you think this is proof of "you pat me on the back and I'll glorify you," - well, a little appreciation has never hurt anybody. It's a lot more pleasant than bickering, isn't it?

THE DENVER CIVIC CENTER

By S. R. DEBOER, Landscape Architect

AS you stand on that step of the Colorado Capitol which is exactly 5,280 feet above the sea, you view the great mountain panorama above the columns of the City Hall. I am grateful to the men of a quarter century ago who preserved that view. Mayor Ben Stapleton who was in on the old Speer plans and steadily and faithfully carried them out built the present City Hall. It is a beautiful building but it came at the end of an architectural era and as such was obsolete when it was brand new. The mountain view, however, never became obsolete. The elevation profiles which we took between Colorado's main government buildings were worthwhile. The view is grand.

There were other plans for the City Hall. A more modern design suggested by George Cranmer and drawn by Jac Benedict visualized a tower building, but to preserve the mountain view meant a low horizontal building. I am glad that this happened.

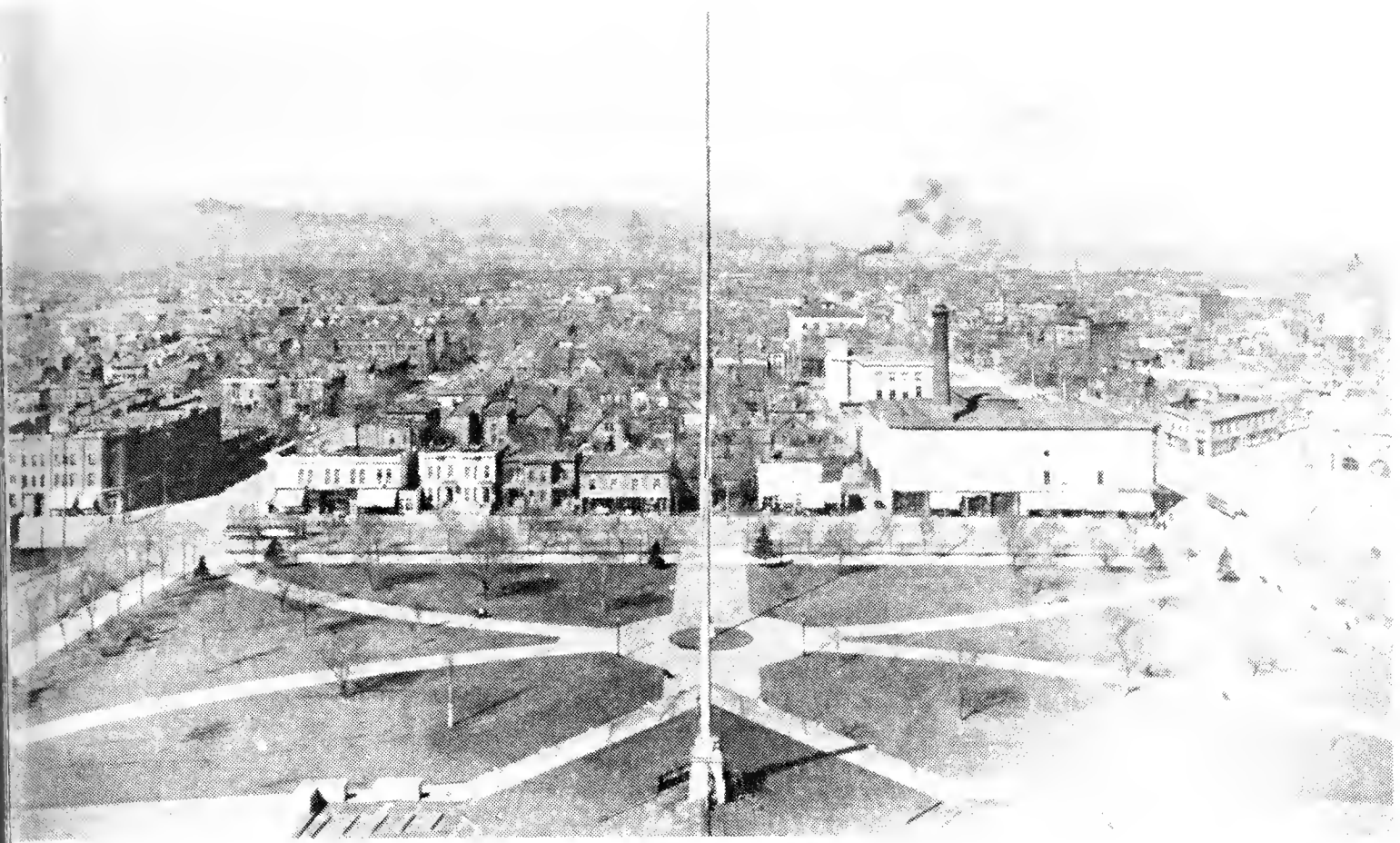
Denver, fifty years ago, was not the tourist center which it is today. Colorado Springs was the center of tourism of the type we had at that time. Denver was the center of a mining industry which had been greatly depleted and in places was not active at all. It had little industry but there was considerable trading especially of mining equipment. It had no shopping centers and the John Thompson store in the loop delivered groceries with horse-drawn wagons. Denver was the center, more or less, of a health district. People came from all over the world to live in the clear sunshine of Colorado and New Mexico and many of them made their headquarters in Denver. At that time there were many sanatoria and hospitals for tuberculosis in Denver and the Denver region.

Many times people have asked me

if the Denver Civic Center is actually worth the money the city paid for it. For that money we could have had much better park service in other places. The Civic Center cannot be used for ball games, for swimming, nor for any large scale recreation. It is not a playground. Was it worth the nearly two million 1911-type of dollars which Denver paid for it? Now that I have posed the question, I am also going to answer it.

After the Denver Civic Center began to show its beauty, a change came over Denver. Its mountain park roads and its city parks generated an influx of tourists. This was materially aided by the establishment of Rocky Mountain National Park and Estes Park became a secondary center of tourism but tributary to Denver. The city at that time was an isolated spot on the western plains. Railroad connections were long and tedious. There were no highways and not enough automobiles to demand them and, of course, there were no planes or buses. By the end of World War I, that is approximately 1920, Denver began to attract tourists and it witnessed growth which was partly due to the reaction of the war. So I would like to answer my own question, "Was the Denver Civic Center worth all the money that the people of the then little Denver had put into it?" My answer is emphatically, "Yes!" I believe that Denver's return from its Civic Center money could easily be figured at least 100% annually. The amount of money which now enters the city's business houses from tourism is so great that the \$2,000,000 cost of the land acquisition for the Civic Center is hardly a beginning. It was a good investment and so were the other parks.

The first plan of the Denver Civic Center was drawn by Frederick Macmonnies who was employed by Mayor



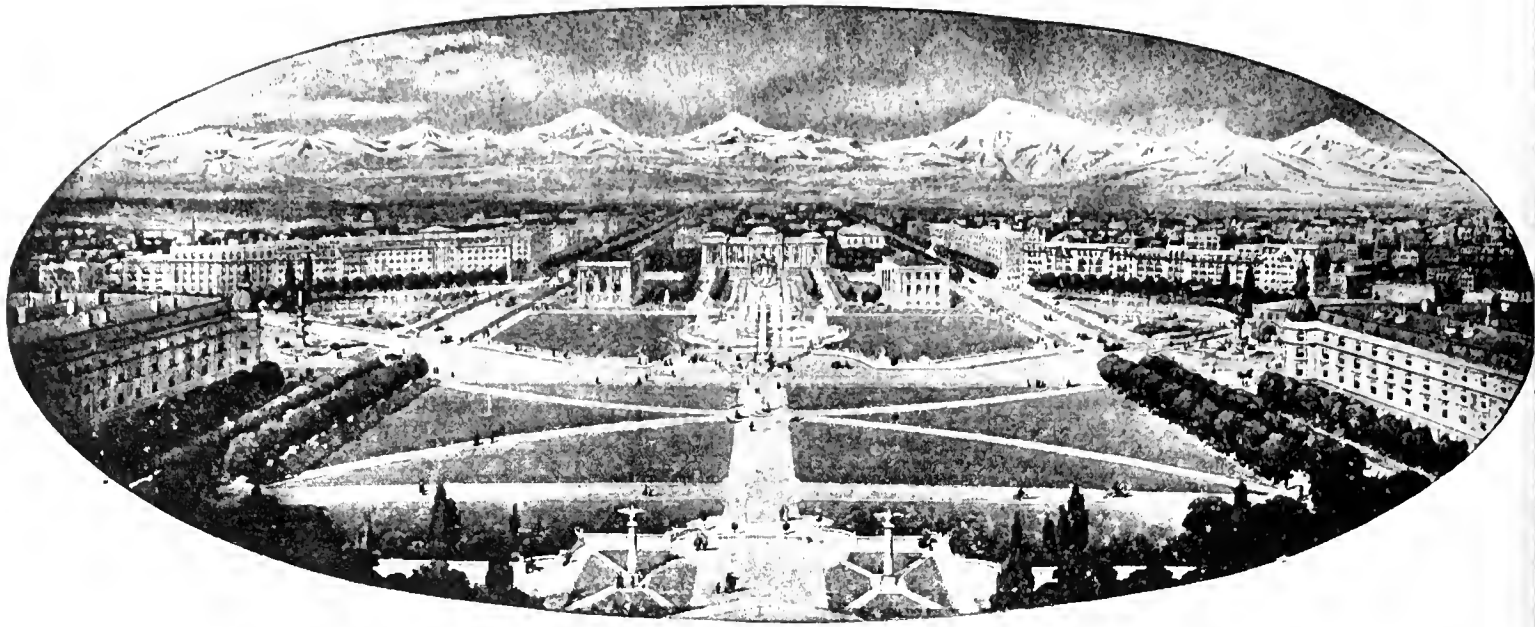
Denver — 1910 - 1919

Photo by Denver Public Library Western Collection

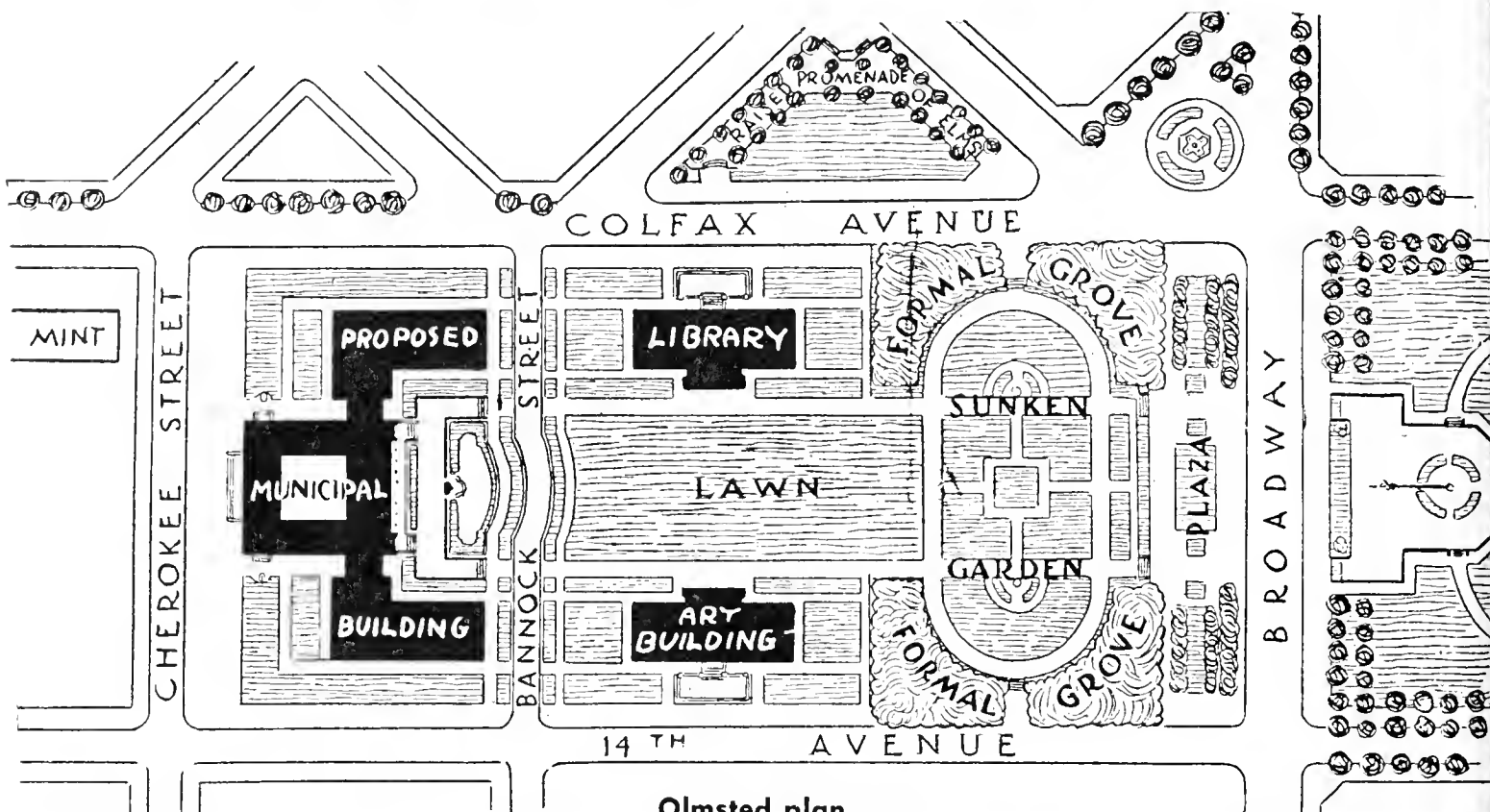


Denver Civic Center — 1933

Photo by Denver Public Library Western Collection



Macmonnies plan.



Olmsted plan.



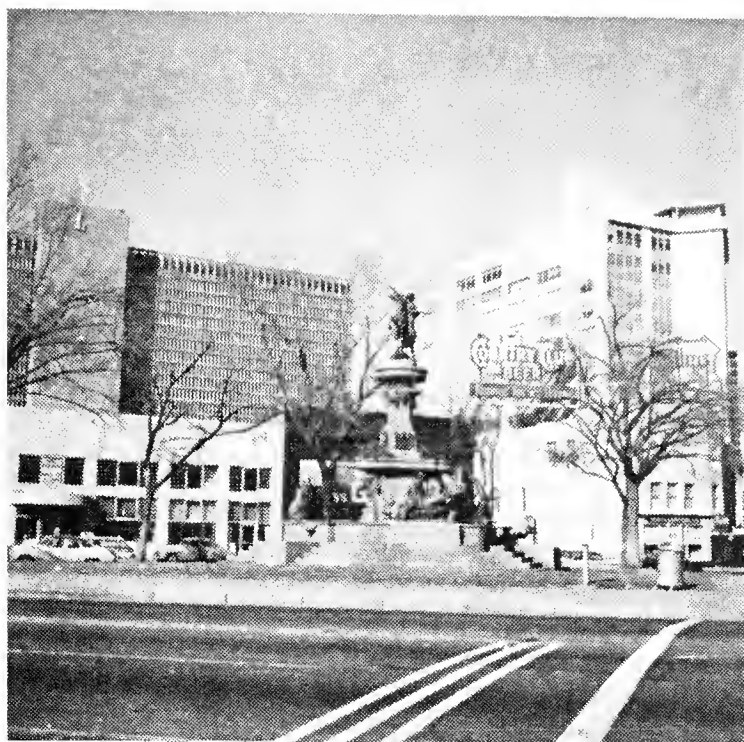
Bennet plan.



The oaks are now 20 inches in diameter.

Speer as a sculptor. After years of litigation, the Colorado Supreme Court finally handed down a decision in November, 1911 that the purchase of the Civic Center land and the other park lands was legal. In spite of the long litigation and the hot legal battles, the fact was brought out that less than 25% of the property owners involved had protested the program. The court confirmed that the people of Denver had the power to purchase land for park and parkway purposes and the payment, therefore, by assessments made upon the property within the district specially benefitted and that the charter provisions in that respect were constitutional. The land deals were made by the City Park Commission of which Jacob Fillius was the president and guiding genius.

The Macmonnies plan was very largely the plan which has been followed. Many planners have worked on the succeeding developments, but the basic elements of the Macmonnies plan were embodied in nearly all of them. These basic items are that the two blocks between Broadway and Bannock Streets would be acquired, that a building would be placed on the west side of Bannock Street in the axes of the Capitol grounds, that this building would be of a low character so as



"Pioneer Monument."

not to obscure the mountain view from the Capitol steps, that there would be a building to balance the old library building, that there should be some architectural treatment of the surrounding facades that face on 14th Avenue and on Cleveland Place. The first major feature of the plan was the Pioneer Monument on the triangle at 14th Avenue which is now part of the new library grounds. A central fountain which has been a feature of all plans, or nearly all, was to be close to Broadway. In later plans it was moved to the crossing of the east and west axes with the north and south axes.

Clearing of the buildings was begun immediately after the Supreme Court decision, and Olmsted Brothers of Boston were employed to draw up the final plan. Frederick Law Olmsted spent considerable time in Denver studying the plan. At that time Mayor Speer did not run for reelection and a new mayor, Henry J. Arnold had been elected. The Park Board was reorganized. This was the Fall of the big snowstorm when many of us got stranded downtown and were not able to reach our homes. Personally I landed in the Albany Hotel and, of course, the newspapers had to publish the names of all the people in the different hotels and my name happened



"Bucking Bronco."

to be on the top of the Albany list. Since that was a rather gay place in the old days it took me some time to live this down in the city offices. Cleaning up the snow was a big task. A mountain of snow was piled on the site of the Civic Center because it was the easiest place to dump it. In the spring we were betting whether the snow pile would last until Decoration Day, but it melted long before that.

After Mayor Speer's retirement, Denver had a period of considerable political uneasiness. After one year with the new mayor, the city switched to the commission form of government. The mountain park roads were begun when Otto Thum was Commissioner of Parks. When Mayor Speer returned from his extended trip through Europe, he was reelected in 1915 under a new charter written by him. Speer had never been very well pleased with the Olmsted plan and he immediately set to work to reorganize the layout of the Civic Center. He employed Edward Bennett of Chicago to make the next study.

The Bennett plan also retained the major axis and its terminal feature. The plan was different in this way that it brought the colonnades on the north and south sides of the Civic Center into the park itself. The Greek Theatre

and the Voorhees Memorial basically came from this plan, but were designed by Marean and Norton and by Fisher & Fisher, Denver architects respectively. The mural paintings in the theatre are by Allen True.

The tree planting of the original plan consisted mostly of Ash trees, but in the revised plan we suggested that Oak trees be used. It was very much an experiment. At that time there were only a couple of Oak trees in Fairmount Cemetery and, of course, there were the Burr Oaks in Littleton. I rather trembled in my boots because after all I was still, more or less, a newcomer and did not know the Colorado climate too well. The Park Board, after long deliberations, decided to go ahead and make the experiment but by the time they came to a decision it was the 17th of April and the trees had to come from Pennsylvania. They arrived after the middle of May and the buds were an inch and a half long and white. I knew that we were licked before the trees were planted, but lo and behold the 250 trees lived with the exception of one or two. I learned something new about horticulture. The best time to transplant a tree is when the buds are pushing and swollen, ready to open up. We nursed those oak trees like babies and I counted them every day.



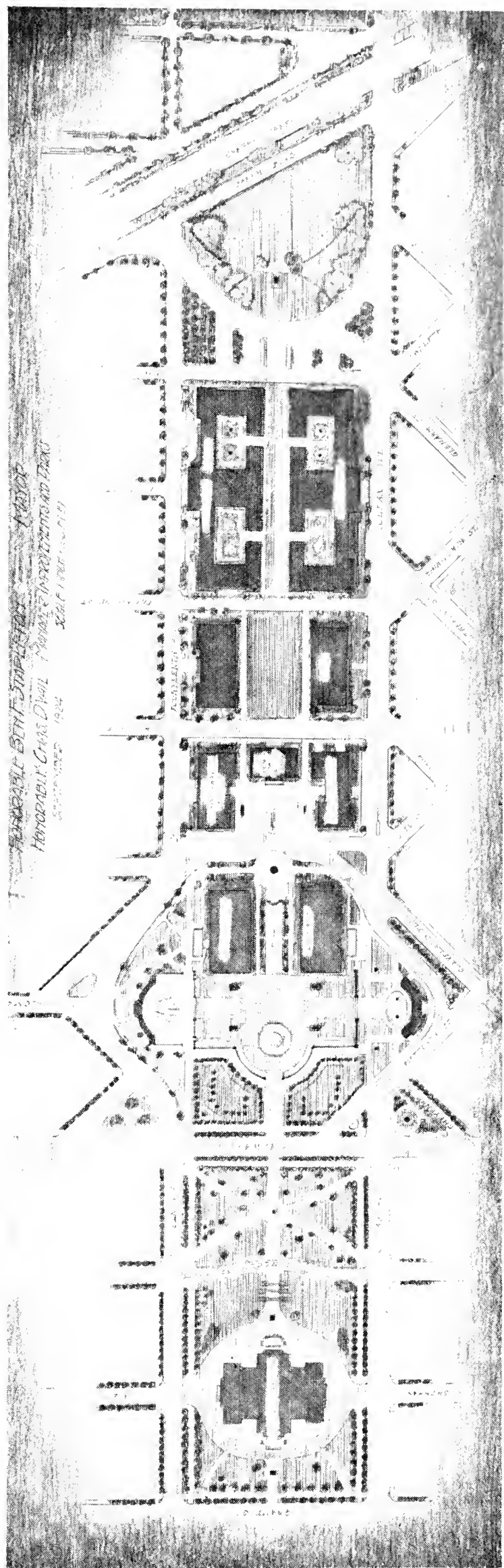
"On The War Path."

to see if a new one was starting out. Of course, we had planted Ash trees in between the Oak trees so that in case we should fail with the Oak trees, we would still have the Ash trees. The Ash trees were later taken out and planted somewhere else.

The Bennett plan as well as the Olmsted plan had the central feature in the middle of the Civic Center where the two axes cross. The plan also included four statues of which only two, the Bucking Bronco donated by J. K. Mullen and the Indian, "On the War-path", donated by Stephen Knight were actually put in. There have been no more fine donations like these for decades. The main objection of Mayor Speer to the Olmsted plan was that it was too horticultural. He had been in Europe and was thinking of a great open plaza, a meeting place for great numbers of people. The theatre design, more or less, carried out that thought and we kept the space between the Greek Theatre and the Voorhees Memorial as open gravel space. Colfax Avenue was bent around the Voorhees Memorial after long deliberation whether Colfax should not be tunneled under the Civic Center.

The next major step in the development of the Civic Center was the building of the new City Hall. The old city hall was located on 14th Street and Larimer Street on the bank of Cherry Creek and had become rather obsolete. There was much argument over the location of the new City Hall and a committee of which Isaac Keator was chairman went out to promote the location on the Civic Center. Other sites had been suggested, especially in the lower part of the city. It was largely due to the activities of this committee that the site on Bannock Street was acquired and the City Hall erected at this point.

After the City Hall had been built, the whole plan of the Civic Center became much more apparent than it was before and we began to think of the



**Plan of Civic Center and its extension
submitted by Mr. DeBoer, 1924.**

Civic Center as reaching from the Capitol to the City Hall. We prepared a plan that would unify the two grounds.

The Capitol Building has always seemed stilted to me. It was a sort of standard design used for many capitols. I would not be surprised if the architect had the basement story in the ground and had only the superstructure on his drawing board. In the construction, the basement story was put above the ground, making the whole design too high. Our plan provided for parking underground in the hill on Lincoln Street. A two or three story parking garage is possible here. The design can be made to eliminate the stilted appearance of the Capitol.

To connect the State and City parts of the park into one design, some of the trees on Broadway were removed so that an open vista between the two buildings became available. The plan called also for moving the English Elms between Bannock and Acoma Streets farther apart and putting a reflecting pool in at this point.

Next we had a hot argument over the location of a memorial fountain for Mayor Speer. I had hoped that it could be placed at the point where the two axes cross. A plan was drawn up and submitted by Arnold Ronnebeck, the sculptor. At the same time the Art Commission had another plan drawn up by William Zorach of New York, a sculptor. This plan would have reorganized the whole Civic Center and all the work that had been done previously would have had to be removed and a brand new arrangement made. The sculpture work itself was beautiful but the rearrangement of the Civic Center seemed to me to mean complete destruction of the Speer plans. The central fountain would be eliminated and there would be an avenue of statuary from Broadway west. It was a rather difficult decision and artists were divided into two parties. Mayor Stapleton finally decided to use the money to

build a Speer Memorial hospital as part of the City Hospital.

The Civic Center plan has been with me for nearly half a century, perhaps longer than with any man living. This is my apology for offering some ideas for its future:

1. The surroundings of the park north of Colfax Avenue and south of 14th Avenue must be zoned against excessive height. The threat of a 31 story building to replace the Tours Hotel I hope has been allayed, but the city must definitely put down zoning restriction which will keep buildings down to six stories or less. They can step up toward the next street as occurred in the Hilton Hotel.

2. The next item of construction should be the treatment of the Capitol grounds.

3. The central fountain still to be named after Robert Speer and the reflecting pool in front of the City Hall should be put in soon.

4. The new Library is not a very attractive building but it is at least low. A fountain to match the Pioneer Memorial would help the appearance of the library.

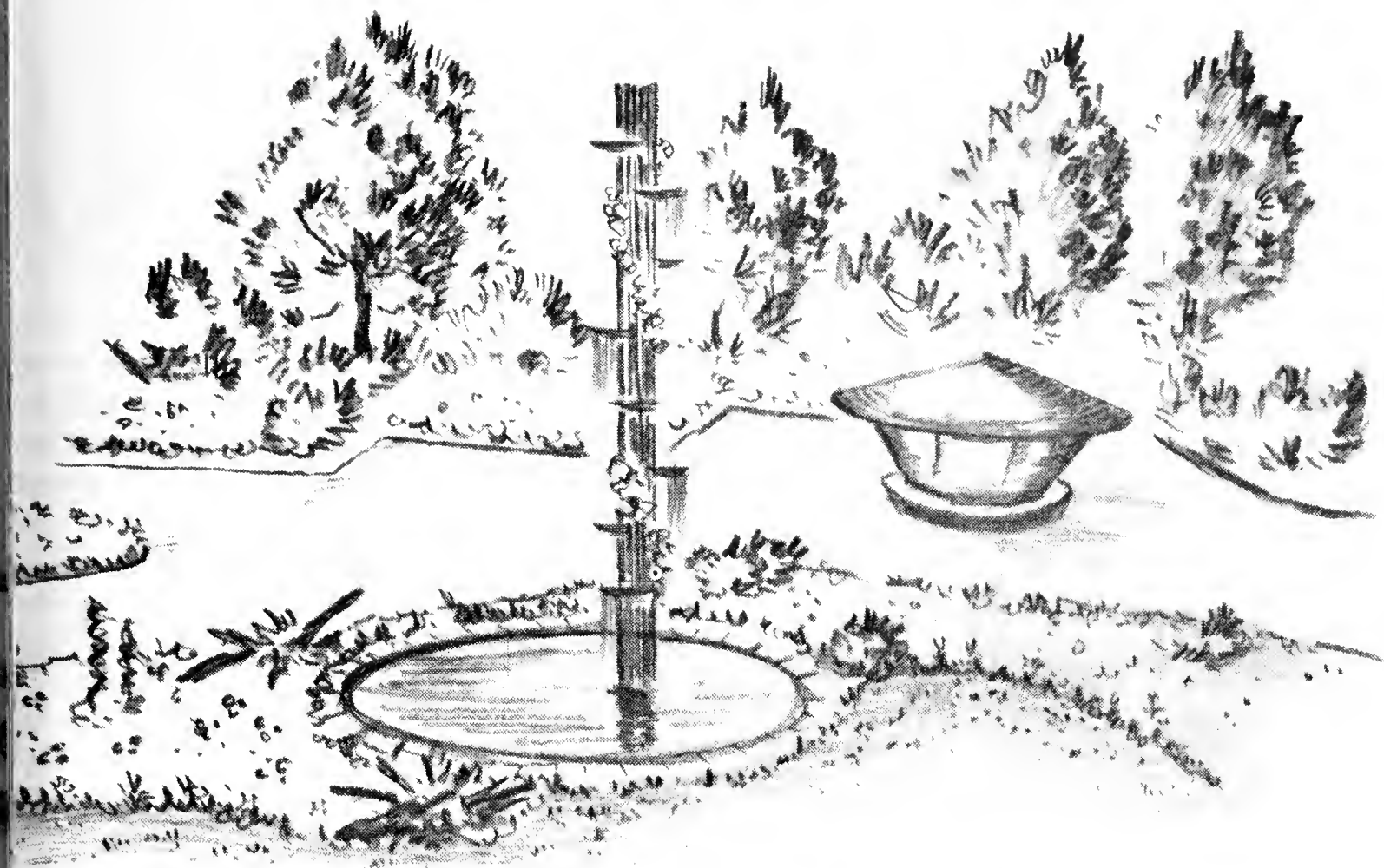
5. A new Art Gallery must be designed to fit the park.

6. Continuation of the park design by a Mall to the West must be revived and consideration given to a connection between the City Hall and the new Westside Court Building.

7. Two statues to match the present ones should be erected.

8. A decision must be reached in regard to a building to match the present Water Building.

9. No new names of civic benefactors have been added on the walls of the theatre. Let's have some new names!



Preliminary sketch of a fountain to be one of the principal features of the 1960 Flower Show.

COLORADO GARDEN SHOW DENVER COLISEUM APRIL 7-10

Plans, plans and more plans are now being crystallized into the greatest garden extravaganza the West has ever known. Satellite gardens filled with the All-America Rocket Snapdragons and Satellite Petunias is but one of the promised features of the 1960 Garden Show.

Offices for the Garden Show have been set up at 909 York Street, Denver, to take care of the many details such as space allotments and other essentials of the show. Garden Clubs and nurseries have been invited to build individual units of the major garden area. Manager Lew Hammer

states that the enthusiasm and cooperation of those contacted to date is excellent. He expects this, our first major garden show, to be a big success. It will be mainly educational in scope and should prove to be a boon to gardening in our area.

As an Association, we are planning an educational booth to tie in with the theme of the show. In addition, many of our members are serving as committeemen for the show, and we hope that each individual will help by passing on the news of this show to his friends.

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COMPOSTING

By IRENE (MRS. JOHN) SCOTT

THIS is the season of beginnings, not only for me, your appointed scribe for the Colorado Federation of Garden Clubs, Inc., but for gardeners the country over who yearly retain the better plantings while looking forward to newer and possibly better floricultural findings.

Flower fanciers, in company with other horticultural hobbyists, are dependent upon the timing of the elements. Some still plant potatoes on Good Friday, and all are calendar conscious. But, not perhaps, from a program planning point.

Programs can make or break a garden club. A program chairman strives to please or pacify, inform, instruct or inspire members through material presented. Nor is this super assignment all. She should be ever mindful of the New Member, who thinks strawberries grow on bushes; the Jaded Member, who fades away from thrice told tales; and the Prospective Member (guest) who might join if the program stimulates or strikes her. "Imagine, vanilla coming from orchids."

There is help. Start with your local Chamber of Commerce, and if there's no celebration there that seems appropriate for even a segment of gardening, proceed to State for another try, and then ascend to National. It's the latter I'm going to enlarge upon, but the same plan applies to all three levels.

A booklet of some fifty pages, about the size of typewriter sheets, formerly distributed by the Chamber of Commerce of the United States, called "Chases Calendar of Annual Events" is available. This brochure, in combination with "The Trade Promotion Planning Calendar" includes the Special Days, Weeks and Months in 1960. If businesses find this an invaluable aid

to highlighting their products, why shouldn't gardeners point up their programs with its timely ideas, too?

Most of us are familiar with some of the Calendar's established dates such as: National Garden Week beginning Sunday, April 17 and continuing through the 23rd. This annual event is sponsored by our own National Council of State Garden Clubs in recognition of the birth of J. Sterling Morton, founder of Arbor Day. National Flower Week, Oct. 23-30 sponsored by The Society of American Florists, promotes the appreciation use and sale of flowers. Vegetable Growers Association of America, Nov. 28-Dec. 1, for the purpose of disseminating the latest research information and equipment to vegetable growers.

Some dates not so widely known might include: National Wildlife Week, Mar. 20-26, focusing attention on national resources and pressing conservation problems. (Conservation and Bird chairman, note.) National Ornamental Iron Month, May 1-31 promotes grillwork, furniture, railings, etc. (This is for you, Landscape Chairman.) Old Lady Day, April 6, honoring the pillars of progress, reminding me that it's not so much a man's pull but a woman's push that gets us through this life. (Life Member Chairmen, this sounds tailor-made.) Asparagus Week is another promising date for imaginative chairmen to transplant. Wouldn't those stalks make nice line designs or spike material for arrangements? But coming home and to date, how about National Cherry Week, Feb. 15-22? This includes the now famous Cherry Pie baking contest, remember?

All right, let's break down this cherry theme, which should be a natural for Coloradoans. Articles for the press on

the multiple values of the cherry tree, with some photographs of either outstanding citizens or pretty girls — who just happened to be passing and stopped to admire the tree or shrub. A tea or social function using cherries on menu and table setting. A scrapbook or window display showing cherries (artificial, when out of season) used in design classes for a show or home. These arrangements could feature cherries or use them in combination with other plant materials or alone. There could be cherry foliage, wood and accessory classes, too. Then, there's always George and his eternal hatchet heading the cherry personalities and legends.

Still stretching the imagination, why not enlist the cooperation of a local grocer, restaurant or store selling cooking utensils or dishes? Perhaps he'll sponsor a special event. Maybe offer an award, ribbon or prize to the person making the best arrangement in an empty cherry container. You'll think up more and better ideas that are applicable to this cherry theme

and countless others that will conform, too.

We are a nation of conformists. For instance, the person who chooses to worship on a day other than Sunday, or wear clothes not found in shops has additional difficulties to surmount. The same holds for the gardener. By "getting with" the commercial peoples who must make a go of their products, be it Cadillacs or caterpillars, programs, promotion and publicity are made easier for garden clubs. It's a kind of togetherness that could be propagated more extensively.

For new gardening glow get "Chases Calendar of Annual Events, Special Days, Weeks and Months" published annually (in Nov.) for each forthcoming year by the Apple Tree Press, 2322 Mallery Street, Flint 4, Michigan. The price, one dollar prepaid. All users are invited to submit information and suggestions for future editions. So — why doesn't some garden club sponsor a national day, week or month? Columbine? Carnation? You name it. The world will observe it.

"FLORIADE" — WHAT IS IT?

If you combine Olympiade with Flora, you get Floriade. It stands for the International Horticultural Exhibition that will be held in Rotterdam this year, from March 25 to September 25, 1960 (six months).

It will celebrate the 400th anniversary of the arrival of the tulip in Holland.

The theme is "from seed to force": everything from the newest in roses to the latest in shipping and storage.

The Floriade will occupy over 125 acres in the center of Rotterdam. The City of Rotterdam has contributed more than \$2 million to its development. You will hear more about it.

—MWP

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The Right Tree

In The Right Spot

By MRS. WILLIAM CRISP,
Member, Home Garden Club

American Elm

OFTEN when a tree is chosen the first consideration is to select it for its ornamental features, flowers, foliage or fruit. Those characteristics are important but the most pertinent factors in determining how appropriate a tree is for a certain spot are the contour, size, and structural framework. Colorful flowers, decorative fruit, foliage, bark are ornamental assets. But they are of little value if the tree bearing them is not adaptable in shape and size and suited climatically and culturally to the location being considered.

To the discerning eye the structural framework of a tree gives a clue to the functions it may serve best. Structural framework can be most easily observed during the winter months. If a tree has a flaring base or urn-shaped habit of growth, it is an ideal subject for framing vistas, buildings or for shading terraces. This habit of the American elm is well demonstrated on certain tree lined streets in Denver, for example 12th Avenue leading into Cheesman Park.

If a tree is broad headed with thick foliage, it is excellent for shade, shelter or may serve as a background. The linden is such a tree. Fine specimens can be seen on the west side of Cheesman Park. A tree with a dense twiggy habit may serve as a screen for boundary or a wind break. In either case

foliage that persists may be an added asset for a dense screen.

Trees that are erect and columnar serve a still different use. They are chosen to accentuate architectural features or other plantings and are often called horticultural exclamation points of the landscape. At East High School, Bolleana poplars and junipers planted next to the building accent and complement the beautiful tower.

Picturesque trees are such trees as hawthorns, and some crabapples. The branch delineation and silhouette present a pleasing deviation from the usual. They are the featured specimens which add distinction to landscape groupings. Such trees may be observed in Cheesman Park and also along Monaco Boulevard.

Certain trees such as buckeye, catalpa, horse chestnut, bur oak and sycamore are continually dropping dried flowers, leaves or fruits and thus disturb cleanliness and orderliness. This tendency to drop litter may downgrade the tree in value for some persons.

After a tree has been selected for its functional aspects, careful consideration must be given to the problems related to culture. Congenial soil must be provided and maintained and adequate moisture and fertilizer applied whenever necessary. Wind protection





Weeping Birch



Hawthorn

also desirable. In exposed positions making is recommended to prevent wind sway. A paper tree wrap may be applied to the trunk of young trees to avoid sun scald. Rate of growth is also important, especially when a replacement is involved.

Some trees like the American elm at maturity tower high in the air above roofs and telephone wires. Others like the pin oak nearly always sweep the ground. One is not necessarily super-

ior to the other, but each has a different use. Don't look for a tree until you define your needs.

Through the year many varieties of trees have been brought into Colorado and have become acclimated. In the Denver area more than 100 species are growing successfully.

In future issues of the Green Thumb look for further information to help you select the tree you would like to plant.

SHADE TREE CONFERENCE TO BE HELD IN OMAHA, NEBRASKA

The 15th annual meeting of the Midwestern Chapter of the National Shade Tree Conference will be held February 10-11-12, 1960, in the Sheraton-Fonelle Hotel, Omaha, Nebraska.

The educational program will feature discussions of diseases and insects that currently are affecting shade trees in the midwest. Equipment and supplies used in the care of trees and shrubs will be on display throughout the three-day meeting. Registration of members and others who wish to attend the meeting will begin at 8:00 A.M., Wednesday, February 10, at the hotel. An attendance of about 400 is expected.



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WIND RIVER CAPER

By E. K. EDWARDS

RECENTLY I had some work to do on the highway in the Wind River Canyon between Shoshone and Thermopolis, Wyoming. It was in deep winter and there was construction going on that necessitated the closing of the road to all traffic except for one hour in the early morning and one hour in late evening.

I had to go into the canyon early for that reason. My work was taking pictures, and the sun did not rise in the depths of the canyon until about 10:30 a.m. and set about 2:30 p.m. That left me with nothing to do in this wild and rugged place from about 7 a.m. until almost noon. So, I looked around for something with which to amuse myself. Rock hunting was not feasible in that canyon of plain granite. Any activity outside the car was out of the question, for it was bitter cold and the wind blew in gusts and gales, proving that the canyon was well named.

But the rushing river was interesting to watch. It was half frozen over in spots with huge rounded boulders ringed in ice distorting the swift flow of the water. Water Ousels dived and darted here and there, first along the surface, then under the cold water. It is a wonder that they did not freeze solid in the ice.

Then suddenly, three mallard ducks came flying upstream, two males and one female, and landed on the river near me. And thereby hangs my tale.

The ducks swam about playfully for a time, then all three dived and came up even more playfully some fifty feet downstream. Over and over this procedure was repeated until they disappeared around a bend of the river a

quarter of a mile away. Presently, they came flying upstream again to land and repeat the process. A workman on the job told me that the three ducks had followed the construction project for a month, playing in this same manner.

As the sun began to peek over the canyon wall, I was preparing to go about my work when I heard the female duck squawking at the top of her voice. I went nearer and watched. It was she who signaled the time to dive. She would suddenly strike the water with her wings, squawk loudly and then dive—the drakes would follow in low suit. She would be the last to surface—all the while the two drakes were looking wildly around for her. When she would pop up they would rush to her side and go through all manner of consoling drake wheezes. Then as I watched, I made a discovery. The uncanny old female would do a most human female maneuver—deception, intrigue, come-on, hard-to-get, make him-work-for-it; call it what you will but this is what she would do. She would dash her wings against the water, let out a guffaw of quacks and act as if she were diving to China, but she did not, she just stayed afloat. The old drakes, goofs that they were, like stupid human males, dove like rocks. Then the hen would point her bill straight up and let off a series of quacks that sounded exactly like human belly laughs. The drakes would then surface far downstream, look all around for her and then come rushing back, fighting each other to see which reached her first. This went on and on, and did she enjoy it. The males never caught on nor joined forces in giving her the ducking of her life.

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Ornamental Crabapples, Arie F. den Boer. American Association of Nurserymen, 1959.

Born in Holland, where his training began, the author, a landscape gardener, developed on the grounds of the Vater Works in Des Moines, Iowa, a great park known as the Charles Sing Denman Woods. Encouraged by Mr. Denman, Arie F. den Boer here established one of the largest collections of flowering crabs in existence. This book is the result of his long experience in the selection and propagation of flowering crabapples with emphasis on the description of the most important species and varieties, accompanied by sketches of flowers, fruits and leaves.

Symbolism in Flower Arrangement, Irvin S. Ferry. Macmillan, 1958.

Flower arrangements can be endowed with meaning as well as beauty of design. Mr. Ferry explains the symbolic meaning of some 200 plants and in addition lists the plant materials and accessories that express in the language of flowers, particular emotions and sentiments, with special attention to Japanese symbolism. Throughout are practical suggestions for flower arrangements and handling of material.

The Rockwells' Complete Book of Roses, F. F. Rockwell and Esther C. Grayson. Doubleday, 1958.

Based on many years of personal experience, the Rockwells give step

by step directions for successful rose culture including propagating and exhibiting with special sections on "Roses in Your Garden: Where and How to Use Them" and "Rose Types and Varieties."

Wildlife in America, Peter Matthiessen. Viking, 1959.

Mr. Richard H. Pough in his introduction writes as follows: "We have long needed a historical survey that would give us the whole story of the white man's effect on wildlife in North America, from the earliest records to the present day. Mr. Matthiessen's book is precisely this, and its fulfillment of this need, its excellent documentation and engaging style of writing, make it an outstanding contribution to the literature in the field." Color plates, photographs and a unique series of more than 100 line drawings of the rare, extinct and vanishing species.

Chinese Flower Arrangement, H. L. Li. Van Nostrand, 1959.

Dr. Li states in his introduction that this work is an attempt to summarize the essentials of the art of floral decoration in China in the form of table culture and vase arrangement. He discusses in his book selectivity in the appreciation of flowers, symbolic values of flowers, and the distinct contribution made by China toward floral art in the highly developed craft of porcelain manufacturing.

—M. B. H.

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Question:

How do you plant an avocado seed indoors?

Answer:

Use a four-inch pot and sandy potting soil. Place the seed with the small end up about one-half inch below the surface of the soil. Keep moist. The process of germination may be speeded up by soaking the seed before planting, and the seed coat may be removed before planting. If you merely wish to watch the germination of the seed, and are not interested in maintaining the avocado as a potted plant, soak the seed and remove the seed coat; then, by using toothpicks inserted in the seed for support, suspend the seed in a glass jar so that the base of the large end of the seed touches the water. Be sure to keep the water level so that the base of the seed is always moist. This makes an interesting project for the children in the family.

Question:

Do lima beans grow in Denver?

Answer:

Yes, lima beans can be grown in Denver. They are not, however, well suited to higher altitudes since they require a long growing season and since the seedlings are more sensitive to cool weather than are those of other beans. Suggested varieties for Denver are Fordhook No. 242, Henderson Bush Lima, and Early Baby Potato Lima.

Question:

This year my geranium cuttings rotted at the base and did not root well. Those that did root and were potted later turned black and shriveled near the base, and soon died. What was wrong?

Answer:

This sounds like black leg stem rot, a fairly common disease of geranium. Next year be sure that cuttings are taken from healthy plants, and use sterilized sand or vermiculite as a rooting medium.

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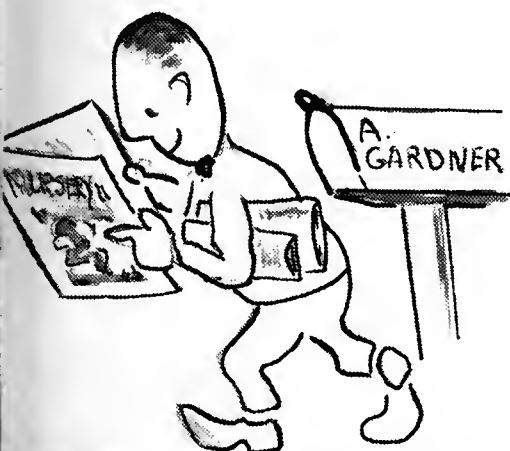


Seasonal Suggestions



WHAT FOR?

Although a great many new developments are taking place in the gardening field, they seldom receive front page mention like discoveries in rocketry or medicine. New flowers, new insecticides, new fertilizers and new tools are appearing with regularity. Since gardening is a seasonal activity all these new gimmicks hit the gardener at one time. This usually throws him into a state of utter confusion. Perhaps we could do well to take a lesson from the past Christmas season, with its cry to shop early and avoid the rush. January and February are slack months for the nurseryman and garden shop owner. Why not visit him now and get the jump on the spring rush? Now is a good time to get acquainted and to talk over your garden problems and needs with your dealer. He can also advise you on items that might be in short supply, so that you can place your order early.



SPRING CATALOGUES



Reading about new plants and products is also a good way to keep posted on new things in gardening. In this magazine you will find several articles on new All-America flowers for 1960. We also have a number of new books and pamphlets in our Helen Fowler Library at 909 York Street. Some of these are on general gardening, while others deal with specific plants and their culture. This library is maintained for your convenience and is open five days a week, Monday through Friday, 8:30 a.m. to 5 p.m. Miss Bonar, our assistant editor, will be glad to assist you in finding the books you want.

Speaking of reading material, you'll undoubtedly receive a catalogue or two in the mails. View them to your heart's content, but be cautious about ordering materials from them. Check first to see if the plant is available locally and if it isn't, check with your local garden authority to see if it is hardy in your particular area. Remember the old adage, "All that glitters is not gold."



SEE NURSERYMAN EARLY

This is also a good time to plan your garden for the coming season. Review your successes and failures of the past season. Decide just what plants you want to replace and the new ones that you want to add. Perhaps you need to revamp a perennial bed or change an entire section of your yard. Plan it now on paper so that you can do the job in orderly fashion come spring.

This period of the year to many persons is



DORMANT SPRAY



FORCE SHRUBS

bleak and dreary, mainly because they have never looked for winter beauty. Next time you're outdoors, notice the fascinating silhouettes presented by trees and shrubs. The forms, pattern design and colors created by the stems and twigs of these plants show the deft touch of the Master's hand. Be sure to read Mrs. Crisp's article on page 2 for more on this idea.

If possible, damage done to our shade tree by the September storm should be repaired before the growing season begins. It's also time to apply dormant sprays for the control of scale insects. These sprays are touchy and have to be applied when the temperature is above 50° and when there is little wind. With our usual run of weather the arborist has very few days in which to apply these sprays. If you have large trees, be sure to contact your arborist soon, so that he can include them in his spray schedule.

While it's early to be thinking about most bedding plants, a few like verbenas, salvias, and coleus should be started indoors from seed around the first of February. If you want any of the All America annuals, be sure to order your seed now while it is available.

You can make spring come a little early by forcing twigs of shrubs like quince, forsythia, and flowering almond indoors any time from now on. All you have to do is cut the branches, crush the basal end and place them in cool water out of the light for several days.

Home Landscaping II. Wednesday evenings at 6 p.m., February 3 through March 23, at Colorado Medical School, Temporary Building A-1. The course, taught by M. Walter Pesman, Denver Landscape Architect, will present more new ideas and discussion of making home grounds individualistic, with emphasis on maintenance, soils, grading, plant culture, and what to look for in buying nursery stock. \$10.00 registration fee.

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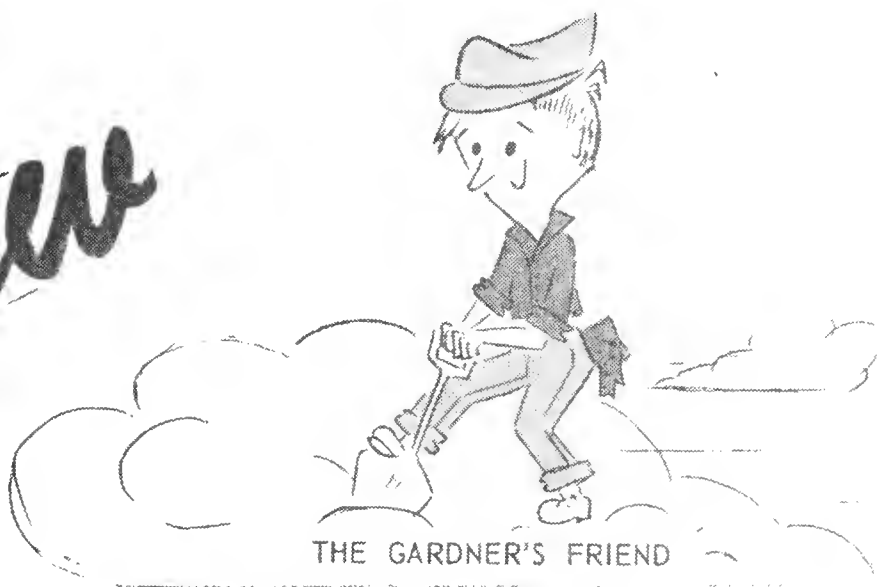
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The Green Thumb

Magazine for Rocky Mountain Gardeners



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MARCH
Vol. 17
No. 2

The Green Thumb
Colorado Forestry and Horticulture Association
Organized in 1884

"To preserve the natural beauty of Colorado; to protect the forests; to encourage proper maintenance and additional planting of trees, shrubs and gardens; to make available correct information regarding forestry, horticultural practices and plants best suited to the climate; and to coordinate the knowledge and experience of foresters, horticulturists and gardeners for their mutual benefit."

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Front Cover—Geranium, Top Narcissus among the Poetaz hybrids. Photo courtesy Bulb Growers of Holland.	

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Members



Calendar of Events

"Fun with Flowers"—A lecture and demonstration is followed by the making of arrangements. Each person brings containers, mechanics, and material. The workshops are open to everyone. They will be held each month at the following times and places:

Workshop I—Botanic Garden's House, 909 York Street, 9:30 a.m., the third Wednesday of each month.

Workshop II—Lakeside Denver Dry Goods, 44th and Harlan, 10 a.m., the first Friday of each month.

Workshop III—Arapahoe County Fair Grounds, Littleton, 10 a.m., the third Tuesday of each month.

The Green Thumb Program — Every Saturday morning on KLZ at 10:15 a.m.

Floral Art Courses — Opportunity School. Every Thursday, 9 a.m.-11:30 a.m., 1 p.m.-3:30 p.m., 6:30 p.m.-9:15 p.m. There is no charge except for materials.

Botanic Garden's House Meetings, 909 York Street.

March 7—House Plant Clinic, 7:30 p.m.

March 8 — Garden Club of Denver, 11 a.m.

March 9—Organic Gardeners, 8 p.m.

March 10—Washington Park Garden Club, 1 p.m.

March 10—Rose Society, 7 p.m.

March 11 — Colorado Forestry and Horticulture Association Finance Committee, 10:30 a.m.

March 11 — Colorado Forestry and Horticulture Association Board Luncheon, 11:30 a.m.

March 11—Landscape Contractors, p.m.

March 14—Judges Council, 10 a.m.

March 14—House Plant Clinic, 7:30 p.m.

March 15—Fun With Flowers Workshop I, 9:30 a.m.

March 21—Botanic Garden's Board Meeting, 7 p.m.

March 24—Civic Garden Club 1 p.m.

March 25—Landscape Contractors, p.m.

March 28—Alta Vista Garden Club, 7:30 p.m.

April 5 — Mountain View Garden Club, 1 p.m.

April 6—Botany Club, 7:30 p.m.

April 7—Orchid Society, 7:45 p.m.

April 8—Colorado Forestry and Horticulture Association Finance Committee, 10:30 a.m.

April 8—Colorado Forestry and Horticulture Association Board Luncheon, 11:30 a.m.

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Officers and Trustees Elected

At our annual banquet and business meeting the following officers were elected to head the Association for 1960. President, Scott Wilmore; vice presidents, Mrs. Alexander Barbour, Clyde Learned, Mrs. Rulison Knox; secretary, Mrs. Hudson Moore, Jr.; treasurer, Earl Sinnamon. In addition to the above officers, Fred Johnson and Herb Gundell were elected to the executive committee.

The following trustees were re-elected to the board for a three year term: Armin Barteldes, George Beach, Mrs. H. R. Catherwood, S. R. DeBoer, Fred R. Johnson, Herbert C. Gundell and Mrs. John Newman.

New members elected to the board for a three year term are Dr. J. Harrison Belknap, Mrs. Elmer Mintkin, and Fred Vetting. Dr. Belknap is a retired engineer and former manager of the Denver Welfare Dept. He has been active on the street and shade tree committee of the Association. Mrs. Mintkin is a past president of the Idaho Springs Garden Club and was chairman of the state convention committee of the Federation last year. Fred Vetting is a partner in the Rocky Mountain Seed Company and has served on our finance committee during the past year.

The unexpired two year term vacated by Mrs. Henry McLister was filled by John Cramer, manager of Sears Roebuck Garden Shop.

An unexpired one year term vacated by Mrs. Frank McLister was filled by Mrs. Henry Conrad. Vella, who needs no introduction, returns to our board after a lengthy illness. Fully recovered, she is again quite active in association affairs.

Mr. Lemoine Bechtold was elevated to Honorary Trustee in the Association. The following is the citation which was presented to him.

Mr. Lemoine Bechtold has been an active member of the Colorado Forestry and Horticulture Association since its organization in 1944. He has been a member of its Board of Trustees from 1951 to date, and was treasurer of the organization from January 1956 through October 1958.

Mr. Bechtold donated large numbers of plants and shrubs to the Association's plant auctions on many occasions. He also permitted the showing of his garden on the annual garden tours.

He has contributed authoritative articles on iris and hemerocallis culture to The Green Thumb.

His donations of plant materials, equipment and a truck to the 1957 and 1958 garden fairs contributed immensely to their financial and horticultural success.

He has been an outstanding developer and hybridizer of iris, spider lilies, hemerocallis, geraniums and lilacs, and has contributed much to the development of gardening and horticulture in the Rocky Mountain Region.

In recognition of distinguished service to the Association (and to the development of horticulture and gardening in this area) the Board of Trustees of the Colorado Forestry and Horticulture Association, at their regular meeting on January 8, 1960, in accordance with Article I, Section 1 of the By-Laws, elected Mr. Lemoine Bechtold an Honorary Trustee. (With best wishes for a return of good health and business and gardening activities.)

By order of the Board of Trustees



Photo Courtesy American Association of Nurserymen

Favorite Shrubs for Landscaping

The following list of shrubs, with descriptions and suggestions for use, was compiled by our editorial staff from lists submitted by Scott Wilmore Nurseries, Inc.; Maurice Marshall, Marshall Nurseries; Kenno Wilmore, Green Bowers Nursery; and these members of the Rocky Mountain Chapter of the American Society of Landscape Architects: Julia Jane Silverstein, Frances Novitt, Gerald Kessler, Edmund Wallace, Andrew Larson, Ch. Morietz, Richard Armstrong and M. Walter Pesman.

SMALL SHRUBS

These shrubs vary in height from one to four feet, and are useful in foundation plantings, planter boxes, informal low hedges, as low material facing a high shrub border, in mass effects and as specimens.

Alpine Currant (*Ribes alpinum*)

Flowers are insignificant greenish yellow. The foliage is bright, light green and is very thick in growth. One of the outstanding small shrubs available.

Gold Drop Cinquefoil (*Potentilla farreri*)

A beautiful shrub. Fully foliated, with golden yellow blossoms beginning in mid-June and continuing in full or nearly full bloom until killing frost in the fall.

Barberry—Red Leaf and Green Leaf (*Berberis* spp.)

Useful in filling space where low to medium sized plants are needed. The red foliage of the Red Leaf makes it popular when used in any sunny location. Used for accent or to face taller background plantings. Green

Leaf has larger leaves and the foliage is thick and shiny, dark green. Good for fall color. Red berries in winter.

Blue Mist Spirea (*Caryopteris*)

The best known introduction of this plant has medium blue spikes of flowers that are quite showy during the early part of the summer. Does well under many situations and will tolerate some shade. Adds color at a time when many shrubs are past their bloom. For best results should be cut off each year to force quantities of fresh, new shoots. Usually used in low borders or masses to face taller material.

Doornalberry (*Symphoricarpos* spp.)

Popular where small to medium sized shrubs are needed. Dependable and reasonably good looking under most conditions. Will tolerate tree roots and adverse situations, both in sun and shade. Use is primarily confined to massed groups.

Freiburg Spirea (*Spiraea froebeli*)

Very dependable except for occasional chlorosis. By proper maintenance it blooms quite freely throughout the entire summer and serves nicely in groups as a facer to taller materials.

Black Cotoneaster (*Cotoneaster horizontalis*)

One of the most overlooked shrubs in the listings. A dwarf by nature, will spread unless kept properly trimmed. Colors very highly in the fall and has small red fruit. Under most favorable conditions—through elimination of winter suns—will carry its foliage to mid-December.

MEDIUM SHRUBS

These shrubs are from four to eight feet in height and are quite useful in shrub borders, as tall shrubs in foundation plantings, in formal hedges and as specimens.

Winged Euonymus (*Euonymus alatus*)

A medium height, full shrub at maturity. Has few, if any, insect pests and takes on an early and beautiful fall coloring.

Vanhoutte Spirea (*Spiraea vanhouttei*)

Is thought to be too common by some people. Is popular because it is dependable under most situations, easy to transplant, clothes itself well at the base, does not sprout, has good autumn color and good winter effect.

King Cotoneaster (*Cotoneaster acutifolia*)

The clean, sparkling glossy appearance of the foliage throughout the season together with very good fall color, medium height and rounded contour make this shrub popular and useful in many situations. It leafs out quite early in the spring. Shears very well; can be used in formal plantings.

Bel Honeysuckle (*Lonicera zabeli*)

Is small and a little more compact than some of the other honeysuckles. Has a very attractive red bloom followed by red fruits which give

it a good appearance throughout the season. It is adaptable in both sun and semi-shade and can be used for medium sized background material.

Showy Forsythia (*Forsythia intermedia spectabilis*)

In early spring it has yellow flowers on gracefully arching branches. Can be espaliered. Needs plenty of room.

Oregon Hollygrape (*Mahonia aquifolium* and *M. aquifolium compacta*)

Semi-evergreen. Useful on east or west exposures. Holly shaped foliage, turning mahogany color in winter. Yellow flowers, blue berries. 2 to 4 feet in spread. Very attractive.

Firethorn (*Pyracantha* spp.)

Semi-evergreen. Small foliage, thorny branches, clusters of orange red berries. Can be espaliered. Useful in almost any exposure.

Manchu Cherry (*Prunus tomentosa*)

Small, light pink bloom. Edible, small cherry fruit. Will spread to 10 or 6 feet.

Bridalwreath Spirea (*Spiraea prunifolia*)

Small, double, white blossoms set profusely in the bright, glossy green foliage. Only weakness is difficulty in transplanting; cured by severely cutting back and thoroughly soaking until the buds start to break.

TALL SHRUBS

Useful for screening, background and as specimens.

European Euonymus (*Euonymus europaeus*)

Green striped bark. Thick, dark, shiny green leaves turning to beautiful red in the fall. Orange-red fruit, similar to bittersweet, remains most of the winter.

Wayfaringtree Viburnum (*Viburnum lantana*)

Fast growing shrub. Large, bright green leaves with a fuzzy, silver underside. Green clusters of fruit turn red then black as the season progresses.

Lilac (*Syringa* spp.)

Heavy green foliage, excellent for background and border planting. Dense growth and beautiful flowers make this an indispensable shrub in landscape design.

Purple Leaf Plum (*Prunus cistena*)

Dark purple leaves in the spring turn to coppery green later in the season. An abundance of very pale pink flowers in early spring. Very effective when used in contrast to other shrubs. Easy to espalier.

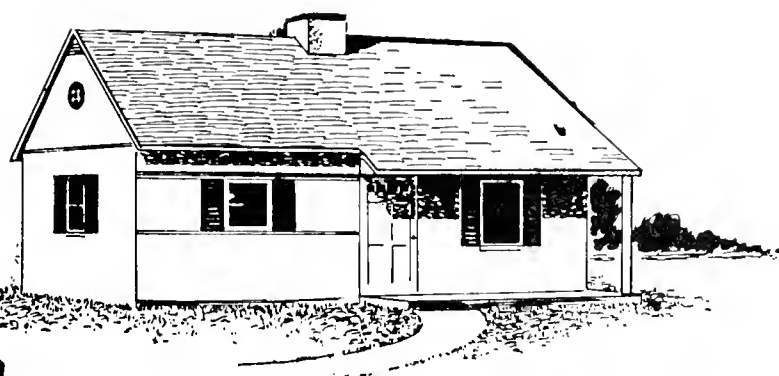
Mock Orange (*Philadelphus virginialis*)

Valuable for its sweet scented white blossoms which bloom intermittently all summer. Can become leggy, so is best when faced by smaller shrubs.

Nannyberry Viburnum (*Viburnum lentago*)

Straight upright growth. Blue berries. Shiny foliage giving good fall color.

HOW LITTLE?



HOW MUCH?

By GERALD F. KESSLER

*Member, Rocky Mountain Chapter American Society of
Landscape Architects*

[LET'S keep up with the Joneses!"]

Perhaps you haven't come right out and said it, but how many times has that idea been at least a subconscious reason for your activities? Even the present day "do-it-yourself" trend matures you against the Joneses; not only in the field of "we have" but also in the areas of accomplishment and ability. Before tackling a project, your thought processes may run along these lines: "How much can we do and for how little money can we do it? George Jones did it himself; why can't we? Don't forget, we can save money by doing it ourselves."

But how much thought goes into the long range design and planning of your activities, especially the grounds around your home which are an expression of *you* for the whole passing trade to view? Yes, even here in the open we may take short cuts to save pennies but, when the short cuts turn out to be costly and unsightly mistakes, we have to turn around and spend dollars to correct the mistakes and achieve the results originally intended. "It really was a cute little plant a few years ago, but look at it now—or, rather, please don't look at it." Have you asked yourself, "Why does the snow and ice remain so long on the sidewalk? Has our

evergreen grown too large? I've spent most of my spare time chopping it back."

Or maybe it isn't anything specific that seems to be wrong; it might be the entire setup in general. Does the inadequacy of your fence make it easy for the neighbors' children to use your back yard as a short cut to the grocery store or for left field when a big baseball game is under way? When you're having a cozy little barbecue for a few friends, do you have an audience and, perhaps, some hurt feelings among neighbors who weren't invited? Does your wife insist that the drapes in the picture window must be replaced because the seedling tree you planted five years ago to provide shade just hasn't lived up to your growing expectations and the sunlight has dulled the original bright, cheerful print of the drapes?

Once shelter has been completed and has been made suitable for day-to-day living, the biggest problems facing the homeowner are usually solved. However, the minor problems are just beginning, in most cases. Now the race with the Joneses begins in earnest, especially the outward appearance of the family property that is on display to the entire neighborhood. Lawn, a few evergreens, shrubs, some flowers

—and the budget is barren for a few more years or even wiped out for all time as far as the landscape is concerned.

It is at this point that many homeowners realize their landscape problems have not been solved. Living space, privacy, awkward outdoor service areas, drainage troubles, continual lawn maintenance problems, undesirable plantings—all these contribute to the dissatisfaction of the homeowner until suddenly he realizes, in desperation, that someone, somewhere, must be an expert who can redesign and remodel the property grounds. A quick glance through the yellow pages reveals the existence of a group called “landscape architects.” But is this what he wants? and just what is a “landscape architect?” What can he do for you, the individual homeowner?

To coordinate the needs, activities, desires, and existing property improve-

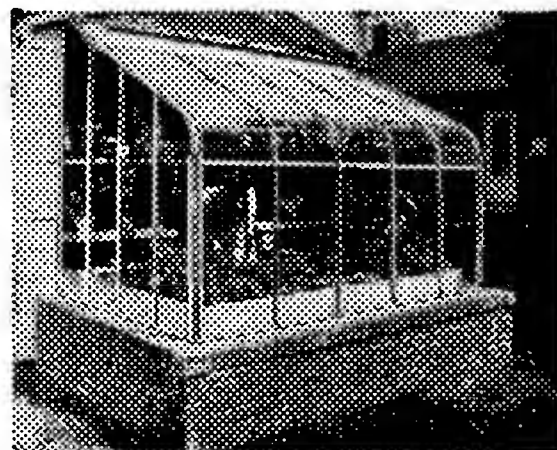
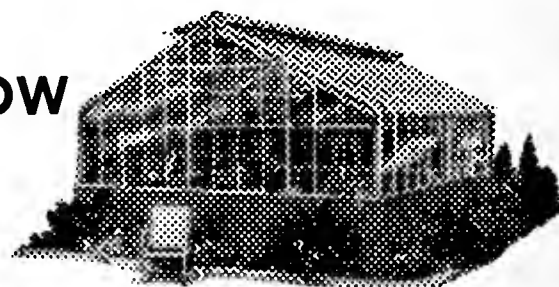
ments—these are the principal functions of the landscape architect. His design for the site planning illustrates the most desirable and economical method of developing land areas in relation to building structures for maximum utilization of available space and enjoyment of living in pleasing surroundings. The planting of trees, shrubs, and flowers is the last detail in his plan for the home grounds.

The landscape architect will provide the homeowner with a Master Development Plan, perspectives, grading and construction plan, planting layout, and construction cost estimates.

Using these plans as his guide, the “do-it-yourself” homeowner can then determine the logical sequence of improvements, approximate financial limitations, and the time available to complete certain phases of his property development.

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PLANT AND ANTIQUE AUCTION

A time for fun and a time for bargains is promised at our annual auction scheduled for Saturday and Sunday, May 7 and 8. Mrs. Barbour and Mrs. Catherwood, co-chairmen, are developing plans to make this an outstanding affair.

We don't want to tip their hand, but we heard that Clyde Learned will be back at his bedding plant stand offering some choice annuals for your garden. It is also rumored that antiques and horrors will be available in quantities. That is providing our members bring us their saleable white elephants. Mrs. Barbour suggests that you set a box on the porch or in the basement and deposit such items in it. When it's full, bring them over or call and we will arrange to pick them up. Don't forget the date, May 7 and 8, and be sure to tell your friends about it.

"A common thing is a grass blade small,
crushed by the feet that pass,
But all the dwarfs and giants tall,
Working till doomsday shadows fall
Can't make a blade of grass.—*Julian Stearns Cutler*

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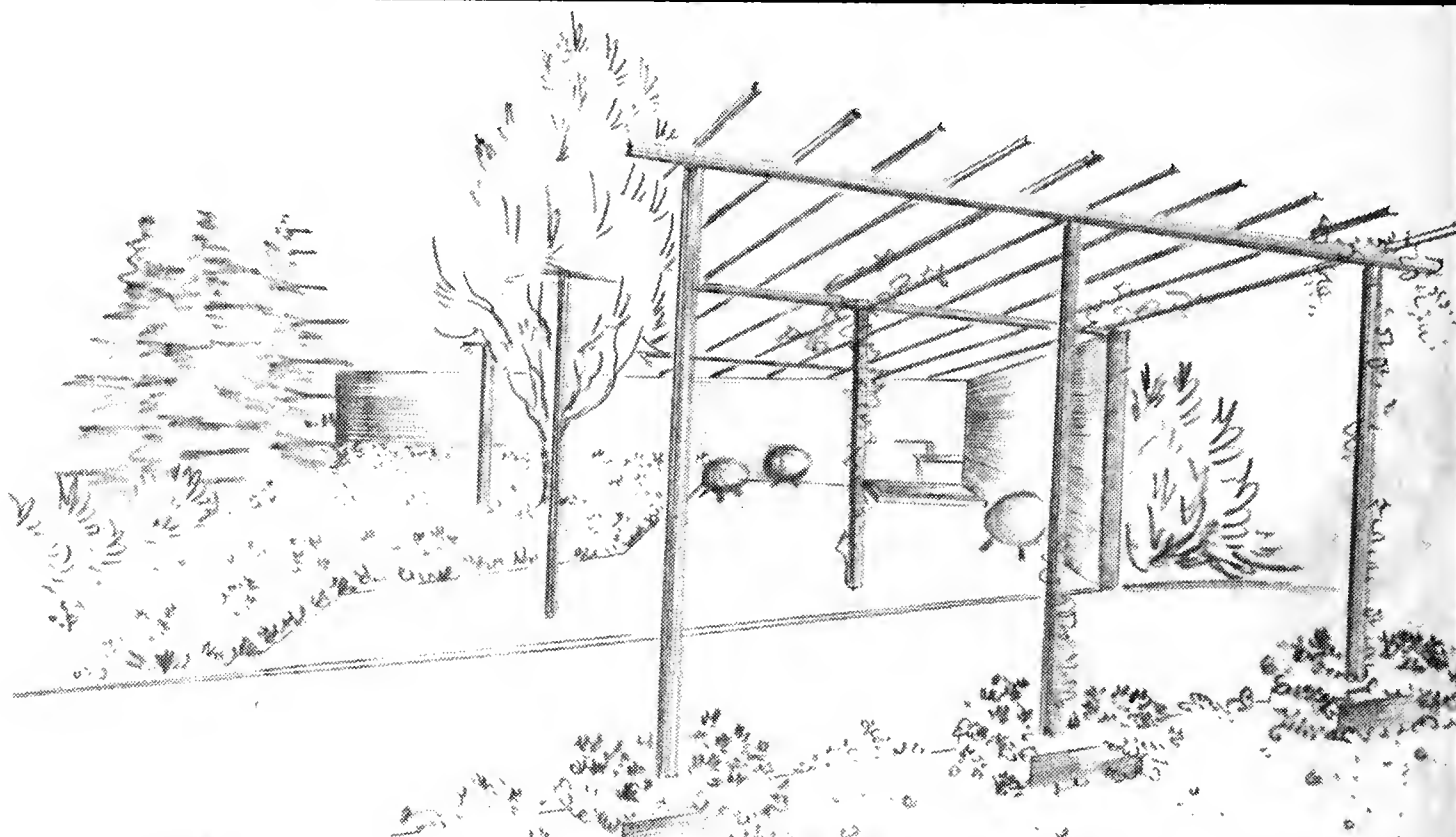
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Sketch of the patio and rose garden to be erected by the Denver Rose Society
at the Garden Show, April 7-10.

What is a Garden Show?

A garden show is the high point of the gardening year, an institution of learning which should be attended by each and every garden club member and garden conscious person. It gives pleasure and stimulates interest through seeing new horticultural developments and enjoying the pleasant relationships that exists among garden-minded people.

A garden show is a school in landscape design, giving lessons in planning gardens, schemes to fit the pocket book and exhibits which are helpful in solving individual garden problems. It is a media in which garden clubs are born.

A garden show instills in a child the love and interest in growing things and a respect for gardens and the wonder thereof makes a better citizen.

A garden show is a beautiful dream in which one is carried away—a fairytale—a reward for studying an exquisite rose or the modest violet.

If our Colorado Garden Show can do this, then indeed, it has fulfilled its great mission.



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INNOCENTS "ABROAD" or WHAT, WHEN AND HOW DOES ONE PLANT IN CALIFORNIA?

BY ROBERT E. MORE

If you think that Colorado is difficult for gardeners, read this article by our Bob More who has moved to new pastures near San Luis Obispo. You'll get some ideas about how to solve new problems in gardening under new conditions. Leave it to Mr. More to go at it whole-heartedly and to get complete information.

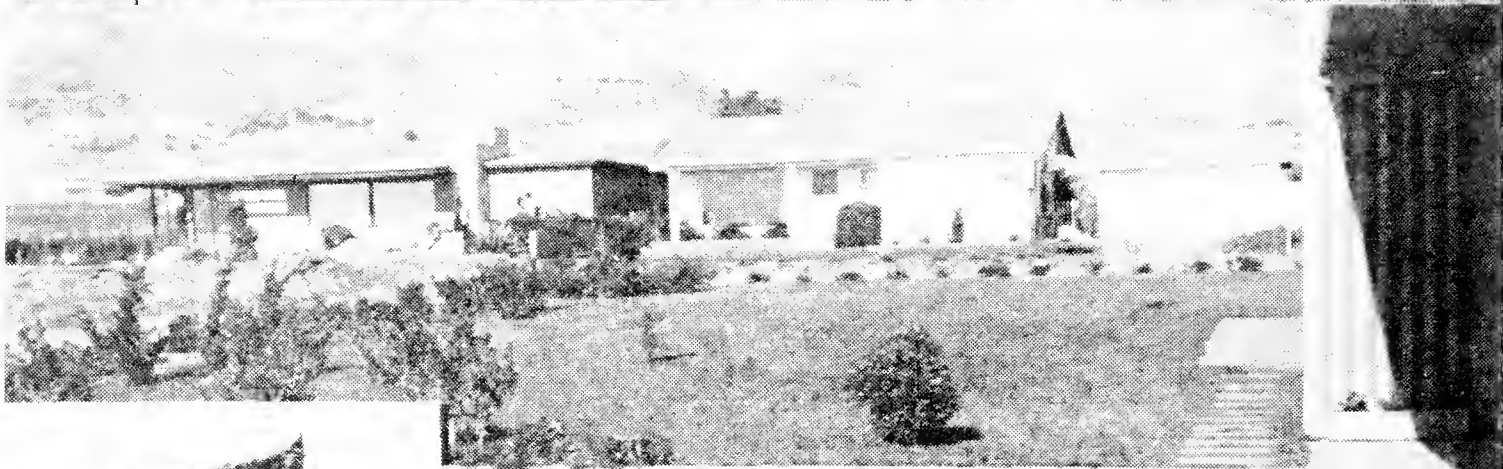
Robert More made a name for himself in botanical and horticultural circles in Colorado before his departure from this state in 1958. Details of his Colorado accomplishments along these lines are given in the article, "Robert E. More, An Appreciation," in the August, 1958, Green Thumb.

IN June, 1958, we purchased land at Sunset Palisades, California. We were very excited. Our lot was 130 feet by 100 feet, fronted on the ocean, and had a delightful little cove with an interesting beach. We immediately took our architect to the site, and he was as enthusiastic as we were, and said our hope for a Sunken Patio above the cove was perfectly feasible. He sketched it with 4 foot walls for wind protection, glass on the ocean side, and an easy ramp from the kitchen.

While waiting impatiently for completion of the building, I bought Western Garden Book of Sunset Magazine and started reading by night and visiting, repeatedly, all the nurseries in the

area by day. In the 30 years I have been reading everything I could get hold of on plants and planting (and the library at Denver's Horticulture House is indeed outstanding) I have never seen any garden book that even remotely approached Western Garden Book. A book of this type is quite necessary because California's unique native flora has been supplemented the last 50 years by exotics from Australia, New Zealand and the Tropics generally. As a prominent horticulturist once said to me, "California gardens are a foreign country."

I read Western Garden Book from cover to cover—377 pages. Then I read through again and then again the



numerous portions I had marked. I got out all welcome at the nurseries and had to buy more plants at LaJolla, "for later shipment," than I wanted to, to keep from being forcibly expelled on my many visits.

Probably no soil was ever more conscientiously "prepared" than ours. The dirt here is a gooier gumbo than Park Hill adobe, in Denver. But like that famous soil, it is very fertile. To break up after months of packing by heavy equipment, I twice went over it with a rototiller, covering it thickly with gypsum after the first tilling. Having killed more native weeds than I ever saw before, I had, prior to this, twice sprayed with Weedone, and after the second tilling I covered the surface with Calcium Cyanamide, a temporary soil sterilant. Having soaked it in thoroughly and kept it wet for three weeks, I then planted my trees, shrubs and Merion Bluegrass. (It rusts badly at the sea coast, and I should have used Newport Bluegrass.) The minute I started watering, I had, as Scott Wilmore would express it, "a jillion weeds." Of course, a new lawn cannot be sprayed with 2, 4-D for at least 4 months, so I became more bent than the Hunchback of Notre Dame during this period — digging, ever digging weeds.

For the benefit of would-be California gardeners, a few specific comments. Generally, when plants are right at the sea coast, and subjected to constant wind and salt spray, suitable plants are both few and not too well worked out as yet. Nurseries have been "burned" so frequently that they are loath to make positive recommendations. Sunset Company sent me a set of clip-sheets on wind and salt water loving plants that was most helpful.

The soil is very alkaline, and lawns require fertilizing *every few months!* We have to water constantly during summer months, and quite often in spring and fall. Plants grow with in-

credible speed and require constant pruning.

The cuts herewith show some of the plantings. Our house faces almost due south and is but 30 feet (at the Cove edge, 10 feet) from the 25 foot rock palisades above the ocean, as shown in Cut A. Porch boxes along the front patio have the Shore Juniper (*Juniperus conferta*). In front of the house are e.g. Blue Pfitzer, *Juniperus monosperma* and *Pfitzeriana glauca*. On the ocean bank are my beloved Russian Savin Junipers taken from Colorado (*J. sabina* Broadmoor and Buffalo) both "taking" the ocean as well as the Shore Juniper, and several creeping Junipers (*J. horizontalis* Glenmore, Bar Harbor and Blue Wilton) all of which give similar promise.

Cut B is the west side of the house, looking east. Part of the Sunken Patio is shown in the right foreground. Plant materials are *Rhus integrifolia*, *Myoporum laetum*, *Xylosma senticosa*.

Cut C shows Mirror plant (*Coprosma baueri*) *Raphiolepis indica*, *Mela-leuca nesophila*, Fire thorn and *Arbutus unedo*, the spectacular Strawberry Tree.

Cut D. shows a ground cover, *Dicentra*, that bears traffic and never needs mowing (among the stepping stones). Here is Scott Wilmore's Gray Gleam Juniper and *Mahonia aquifolium compacta*.

Dwarf Junipers I brought from Colorado are *Pinus cembra*, *Pseudotsuga taxifolia compacta*, *Picea engelmanni* Glenmore Dwarf, *Pinus flexilis* Glenmore Dwarf, *Pinus aristata*, *Pinus sylvestris Wateri*, *Thuja occidentalis* Hetz Midget, a gem of gems, and others.

Boxes along the east side of the house have Kinnikinnick, called Bearberry here (*Arctostaphylos uva-ursi*), Dwarf Pomegranate (*Punica granatum nana*) and Dwarf Silver Cotoneaster (*C. glaucophylla*.)

And that is it.

History And Purpose Of All-America Rose Selections, Inc.

All-America Rose Selections, Inc., founded in 1938, is an association of growers dedicated to the task of bringing better roses to the gardens of America through research and encouragement of improved methods of hybridization and propagation.

The designation "All-America" is bestowed annually on the best new varieties introduced. Plants receiving this top award are selected on the



Fire King.



Sarabande.

basis of actual performance during two-year testing period.

The careful screening of new varieties and the establishment of a general standard for quality roses has rescued the public from endless confusion. There are more than 5,000 named roses available and in many cases the average gardener is thoroughly bewildered when confronted with the problem of what to include in his rose garden.

To eliminate the difficulty in picking the right new varieties, All-America Rose Selections sponsors thoroughgoing rose trials in official test gardens. The gardens are located in different sections of the country so that new varieties may be studied under various soil and climatic conditions.

At these "proving grounds," some at leading universities, others at nursery series and municipal gardens, impartial experts watch the rose plants under actual growing conditions during the two year test period. The roses are checked for such characteristics as hardiness, fragrance, length of flowering period, number of blooms, resistance to disease and all other important qualities.

A uniform point system of scoring is followed and the experts carefully judge the plants on many different

categories. Roses entered in the trials are given code numbers which are the sole means of identification. Only those that earn near perfect scores are awarded the coveted designation, "All-America Rose Selection." There is no compromise with the exacting standards set up by AARS. In 1951, for instance, it was felt that none of the entries came up to the All-America specifications, so no award was given. In all, more than 1,000 roses have been entered in the trials and only fifty-three have won awards.

The AARS system has been the most effective contribution to the raising of rose standards in recent years, and the All-America label is regarded everywhere as the guarantee of highest quality roses.

Garden Party, Sarabande and Fire King, the winners of the award for 1960 are the newest varieties to enter Freedom's hall of fame. The 1959 winners were Ivory Fashion and Starfire, while honors for 1958 went to Fusilier,



Garden Party.

Gold Cup and White Knight. A complete list of AARS winners may be obtained by writing to All-America Rose Selections, Room 3006, 45 Rockefeller Plaza, New York 20, N. Y.

There are many good nurserymen in Colorado. ALL of them do not know ALL the answers, but the worst of them can give you better material and service for your garden dollar than most of the salesmen and catalogs from other regions where they have not learned that Rocky Mountain horticulture is Different.

We try to have such good plants, such accurate advice about growing them and such a complete variety of things that grow well here that you no longer need to send away for the nice or new plants that they want.

We expect to have stocks complete and ready to go by the middle of March. Come and see us.

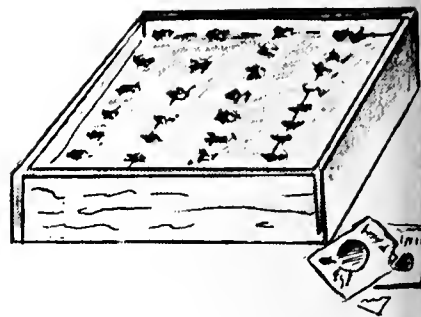
George and Sue Kelly
at the Cottonwood Garden Shop

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SOWING ANNUAL SEEDS

JOHN S. CORYELL



THIS article is being written for you, whether an amateur or an expert, so I will not try to be technical, but will write from experience. If you will follow the *ideas* behind each suggestion, rather than the exact suggestion, then sowing seeds in 1960 will be much easier.

For purposes of this article, annuals are any plants which are grown from seed and planted out of doors for bloom the same season. Thus many weak perennials will be included in this group.

Let's separate annuals into long term growers, and short term growers, and qualify each by saying long term growers require from six to 12 weeks from seed to setting outdoors, while short term growers require approximately 6 weeks of growth before the frost free date.

Petunias, snapdragons, carnations, lobelia, portulaca, salvia, dahlias (from seed), alyssum, phlox, violas and pansies, are among the most important annuals which need to be sown early to produce extra early blooms. January 15th to March 15th is the best period to sow these seeds for late May gardening. The later you sow these seeds, after say February 15th, the later they will bloom in your garden. After March 15th it is probably better to plan on buying your requirements for this year.

In purchasing growing plants, remember that you can have plants in bloom earlier if you purchase plants grown in individual bands, or pots, rather than 12 or more to a small flat. Individual plants cost more, but are worth it, for the extra blooms.

Another point, choose small to medium sized plants, and pinched-back ones, rather than tall, skinny, one with only a bloom or so. Pinched bushy plants are more valuable, and will start to grow much quicker than tall, crowded plants.

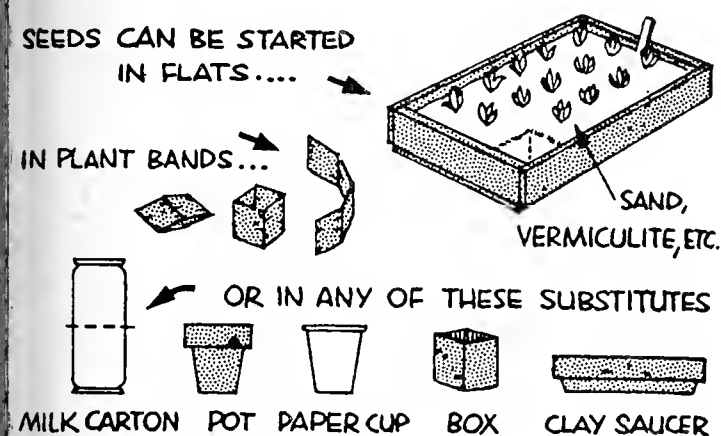
Marigolds, zinnias, cosmos, bachelor buttons, calliopsis, celosia, everlasting flowers, impatiens, larkspur, matthiola or stocks, moonflowers and morning glories, scabiosa, can all be sown now, and transplanted by Decoration Day.

Time is short, and the seeds must be sown now. What should we use for the seed bed? Fine vermiculite, or perlite is ideal IF you will feed the plants twice a week with a weak fertilizer solution. One half teaspoonful of Plant Marvel, Hyponex, or other good plant food to a gallon of water is of suitable strength. Feed the seedlings once or twice a week. Transplant seedlings as soon as they are large enough to transplant. They are large enough as soon as you can handle them, and the smaller the better.

To sterilize soil: Select shallow wooden boxes, or flats. Do not use plastic containers, since hot water will warp them. Fill the flats with good soil, or a mixture of 50% sand and 50% peat or screened sphagnum moss. Cover the flat with cheese cloth or unbleached sheeting, or any cloth that will allow water to flow through but will not let the soil wash. Heat a tea-kettle of water to boiling and pour slowly over the flat. Let the water soak in and pour on more until the water flows out the bottom. It is necessary to use lots of water

nd to have the water boiling when ou start. Remove the cloth and place ver the next flat and repeat.

When the soil has cooled and rained, it is ready to receive the fine eeds. Scatter them lightly over the oil and cover the flat with a pane of lass or plastic, or perhaps Saran wrap. Remove the glass daily to allow some f the water to evaporate from the lass. Simply turning the glass over orks well. When the plants appear, is time to begin to admit more air. Remove the glass for an hour or so, hen two or three hours, then a half r whole day, and finally all day and ight.



Transplant the tiny seedlings to ther flats, boxes, or pots. You can also use milk cartons, egg cartons (one o each "egg" partition), or to other ots. Transplanting is good for most eedlings. It breaks the tap root, and auses the roots to be more fibrous, nd thus better able to withstand the ove into the garden.

Poppies, bachelor buttons, larkspur, ipines, and some others resent trans- lanting, and should be transplanted hen very young into individual pots, r sown in individual pots.

Most homes do not have enough ght in the windows, nor room, to row good seedlings. If you have only flat or two, they can be carried out f doors in the morning, and into the

garage or house for the colder nights.

•Petunias, snapdragons, carnations, lobelia, portulaca, alyssum, batchelor buttons, calliopsis, stock, and others may be transplanted out of doors early in May, and protected with a plastic covering only when the weather turns very, very cold.

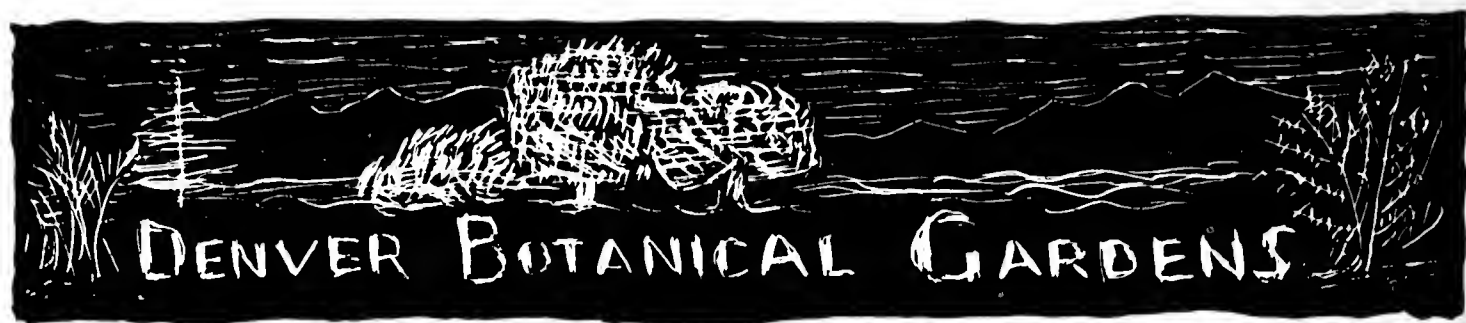
It is surprising how much cold these annuals can withstand. The length of time you keep them indoors depends upon how much room you have, and how soon you wish to gamble with the out of doors tempera- tures.

Marigolds, zinnias, tomatoes, be- gonias, and other tropical plants should not be put out of doors, in the ground until Decoration Day, or early in June. The weather may be fine, but the earth is still cold and so will delay good growth for these plants. Sometimes it is worth the gamble to put them out in the garden. Just resolve to replace them if the weather proves fatal to them.

We must gamble when we sow the seed, when we transplant, and when we put them out of doors. We must judge what we hope to achieve, with the cost of seed, labor, or time, and hope our rewards are worth all the efforts we put forth.

Everyone should also study the seed catalogs and pick a new variety, or type of annual to try each year. In our greenhouse we have tried to grow something different each year, but find the public does not like to buy un- known varieties, so it is up to you to buy the seeds and grow the new types for yourself.

If you have any problems, or need any advice, please feel free to call us or write: John S. Coryell, Arvada, Colorado. Phone HArrison 4-5024. Good gardening!



Children's Garden Number One Project

AT THE annual meeting of the Botanic Gardens Board of Trustees, both its President, Lawrence Long, and its Director, Dr. A. C. Hildreth, stressed the need for developing a children's garden this year. Recognizing that a void exists in the plant sciences in our educational system, this trial plot could well be the beginning of a school garden program similar to that in Cleveland. There each child in the primary grades of the public schools has an opportunity to plan, plant and grow a small garden.

Noting that again this year progress in the garden would depend on the generosity of the people in the metropolitan area of Denver, Dr. Hildreth listed three additional projects he would like to see completed this year.

They are as follows:

1. Completion of the stone and concrete work between York and Josephine, so that this area can be landscaped.
2. Utility greenhouses, hot beds, and cold frames for propagation of plants for the garden.
3. A conservatory.

In addition, he said that some border and background planting of trees and shrubs would be done and that a number of garden areas would be developed by various garden clubs and plant societies.

President Long reviewed the progress of the past year in his report and closed with a number of recommendations; the following should be of interest to our members.

1. That the office of historian be created and that the president be given the authority of appointment.
2. That commencing in the spring the Gardens and Headquarters be kept open Saturdays and Sundays.
3. That all-out emphasis be placed on putting our York Street site into cultivation before summer with special emphasis on the children's garden as our number one project.
4. That garden clubs be invited to accept and develop, for this year, areas in the Botanic Gardens. Such development plans to be subject to our Director's approval.
5. That a committee be appointed to meet with the Colorado Forestry and Horticulture Association for joint study of closer coordination between the two organizations.

President Long, acting on the first recommendation, that evening, appointed M. Walter Pesman, our editorial committee chairman, historian.

Lacking an opportunity at this meeting to thank Mr. Long for his fine work in behalf of the Botanic Gardens, his executive committee submitted the following resolution.

"The members of the executive committee wish to express their gratitude for his dedication to this fine project, for his unselfish expenditure of time, his availability and his generous leadership." We would like to join them in this expression of thanks and hope that under his leadership the goals set for this year will be achieved.

IRON IN YOUR GARDEN

By DR. A. C. HILDRETH

Director, Denver Botanic Gardens

ONE hundred and two chemical elements are known. The majority of these have been found to occur in plants. Only 15, however, are now recognized as indispensable. These are: Carbon, oxygen, hydrogen, nitrogen, phosphorus, potassium, calcium, magnesium, sulphur, iron, manganese, boron, zinc, copper, and molybdenum. Garden plants obtain their requirements of the first three listed elements mostly from the atmosphere and water; the remaining dozen, often called "mineral elements" must come from the soil or other nutrient medium. If there is a deficiency of any essential element the plant will have characteristic abnormalities in structure, function or color.

In strongly alkaline soils, all types of horticultural plants—trees, shrubs, vines, herbaceous flowers and lawn grasses—may show signs of iron-deficiency. This trouble is most prevalent in arid and semi-arid parts of the world, such as plains and intermountain areas of Colorado, where conditions favor the accumulation of alkaline material, especially lime, in the soil. The outstanding symptom of iron-hunger is yellowing of the foliage which appears first in the youngest leaves of rapidly growing shoots. Later, all normally green parts of the plant may show the effect. By holding a moderately iron-hungry leaf in front of a strong light it will be seen that only the areas between the veins are yellow, while the veins themselves stand out as a green pattern on a yellow background. In severe cases the veins also are yellow. Deprived of the protective influence of green pigment, yellow leaves often are injured by our brilliant sunlight, the injured portions turning brown.

Abnormal yellowing, or loss of

green color in plants, is called "chlorosis" and plants and plant parts so affected are said to be "chlorotic." Chlorosis* is a ten-dollar word which means merely that something has gone wrong with the green pigment (chlorophyll). Foliage deficient in chlorophyll cannot carry on normal photosynthesis. Chlorosis, from whatever cause, stunts plants, and reduces their flowering and fruiting. Severe cases may result in premature dropping of foliage and even death of the plant. Chlorotic plants are more susceptible to cold injury the following winter than those that had their normal green color throughout the growing season.

Plant species differ markedly in their susceptibility to iron-deficiency chlorosis. For example, azaleas, hydrangea, flowering quince and larch become chlorotic in only slightly alkaline soils. Lilacs, caryopteris and Colorado spruce, however, retain their normal color under any degree of soil alkalinity likely to be found in Colorado gardens. Of course there are desert species such as greasewood and rabbit brush that grow in extremely alkaline soils without becoming chlorotic. The great majority of our garden plants, however, are intermediate in their response, tolerating only moderate degrees of alkalinity without showing chlorosis.

The mechanism by which alkaline soils cause iron-deficiency chlorosis in

*Chlorosis is a common symptom of plant disorders. Yellowing of foliage may result from deficiencies of various elements; excesses of mineral salts; various virus, fungus and bacterial diseases; injuries by insects, mites and weed-killers; water-logging of soil and other causes. In our high plains and intermountain areas, iron-deficiency is such a common cause of chlorosis that the word here is often used erroneously as synonymous with iron-deficiency.

plants is not known. Attempts to give a popular explanation of the phenomenon usually result in over-simplification and disregard of known facts. A shortage of iron in the soil is ordinarily not involved. Alkaline soils in which plants develop iron-deficiency chlorosis often contain more iron than acid soils in which such plants retain their normal green color. From this one might jump to the conclusion that plants cannot extract iron from alkaline soils. But many desert plants get enough iron for their needs from extremely alkaline soils. Also, chemical analysis prove that plants showing iron-deficiency chlorosis on alkaline soils may actually contain a higher percentage of iron than green plants of the same species grown on acid soil. Evidently plants do take up iron from alkaline soils.

From these facts one might reason that such chlorotic plants contain iron in some form that cannot be used in the normal process of chlorophyll formation.* There is some chemical evidence to support this view. But why can some plants absorb iron from alkaline soils and use it in the process of chlorophyll development while other plants that also absorb iron from such soils cannot utilize it in the chlorophyll-making process? And what is the form of this iron which chlorotic plants cannot employ in chlorophyll forma-

*Chlorophyll contains no iron, but iron is necessary for the process of chlorophyll formation in plants.

tion? These are problems not yet solved.

Although we do not know all the what's and why's of iron-deficiency chlorosis, we know some things that can be done to prevent or correct such chlorosis.

1. Plant only species that tolerate the degree of alkalinity found in the garden soil. This method of avoiding chlorosis will greatly restrict the planting list if the soil is very alkaline.

2. Graft susceptible species on tolerant root-stocks. The root, not the top, determines the susceptibility of a plant to iron-deficiency chlorosis on alkaline soil.

3. Replace the alkaline soil with acid or neutral soil. In Colorado, acid mountain soil has long been used for replacing alkaline soil in beds and borders of plains gardens and for potting house plants.

4. Acidify the soil. Applications of acid peat, sulphur, aluminum sulphate and other acid materials have been used for this purpose. The high cost of such materials makes this method impractical for correcting a large volume of soil such as that in the root-zone of a large tree group.

5. Apply soluble iron compounds to make up the iron deficiency. This is usually the quickest and cheapest way to cure iron-deficiency chlorosis.

There are three general ways to get iron into a plant. (1) Through the leaves, by spraying the foliage with

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solutions of iron salts. (2) Through the roots, by adding soluble iron compounds to the soil or by placing them in direct contact with the roots. (3) By injecting iron compounds directly into the tissues of trunk roots or main branches. The method employed depends upon the kind of plant to be treated and the whim of the gardener.

Almost every known iron compound has been used for correcting iron-deficiency chlorosis. Iron sulphate (copperas) is the cheapest source of iron for this purpose but it has certain disadvantages. It stains light colored brick, stone, concrete and certain painted surfaces and discolors open flowers. It will injure plants if used in excessive amounts and is too toxic for injection into plant tissues. It is satisfactory, however, for foliage sprays, for application to the soil and for contact-applications to the roots. One ounce per gallon of water makes a suitable solution for spraying lawns and mature foliage of trees. For young leaves and for tender-foliaged species the strength should be reduced to one-half or one-fourth ounce per gallon of water.

Lawns may be treated also with the dry chemical at the rate of 3 lbs. per 1000 sq. ft. Application should be made only when the grass is dry. Light irrigation should follow immediately. Perennial borders, strawberry beds and small shrubs may be treated with the dry compound by application to the soil surface at the rate of 1 lb. per sq. ft., followed by light cultivation and irrigation. If chlorosis is not corrected within two weeks the treatment should be repeated.

For treating a large shrub or small tree, a narrow trench or several holes one to two feet deep should be dug

around the plant, the distance from the trunk varying according to the size of the plant. The object is to expose many small roots. Dry iron sulphate is placed in the excavation which is then refilled with soil. A pound of iron sulphate is used for each inch of trunk diameter.

Large chlorotic trees should be treated by injecting dry ferric citrate into the wood. Holes $\frac{3}{8}$ inch in diameter are bored 3 inches apart around the circumference. They should be from 2 to 3 inches deep, depending upon the thickness of the bark, and should slant downward to prevent the iron salt from falling out. The holes are filled nearly full with the chemical and then sealed with an asphaltic tree-wound dressing.

In recent years chelated iron compounds have been developed that can be used for correcting chlorosis. These materials have none of the faults of iron sulphate. They can be used as sprays, injections or as applications to the soil. Their only disadvantage is their cost, which is 4 or 5 times greater than that of iron sulphate for the same corrective effect.

The use of iron compounds for correcting iron-deficiency chlorosis has been used for more than a century and a quarter. Only recently however, has this treatment been widely employed in our region. Most of our dealers in garden supplies now offer iron preparations for controlling chlorosis. It is surprising, however, that so many of our gardeners still do not use iron compounds in their gardens nor do they recognize iron-deficiency chlorosis when they see it. Iron has a definite and permanent place in gardens built on alkaline soil.

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Bluegrass (*Poa pratensis*) as a Lawn Grass

ROBERT W. SCHERY
Director Lawn Institute

Poa pratensis has had a long and varied history, having been recorded in pre-Christian times in the North Mediterranean civilizations of that day. By the time it became named "Poa of the meadow" (*Poa pratensis*), by Linnaeus in 1753, it had volunteered widely throughout Europe. Today it is prominent in the cooler parts of Europe, although (I gather) not having received quite the acclaim as a lawn grass there that it has in the New World.

There is no exact recording of bluegrass' arrival in America. Likely it was an ingredient of the cattle bedding on the first ships bringing colonists to the New World. It had become widely spread through eastern coastal North America by the time of the War for Independence from Great Britain. As colonization moved westward, *Poa pratensis* volunteered on the extensive acreages cleared of trees, the soil turned for agriculture. Very likely its first spread westward was down the St. Lawrence valley and across the Great Lakes with the French missionaries.

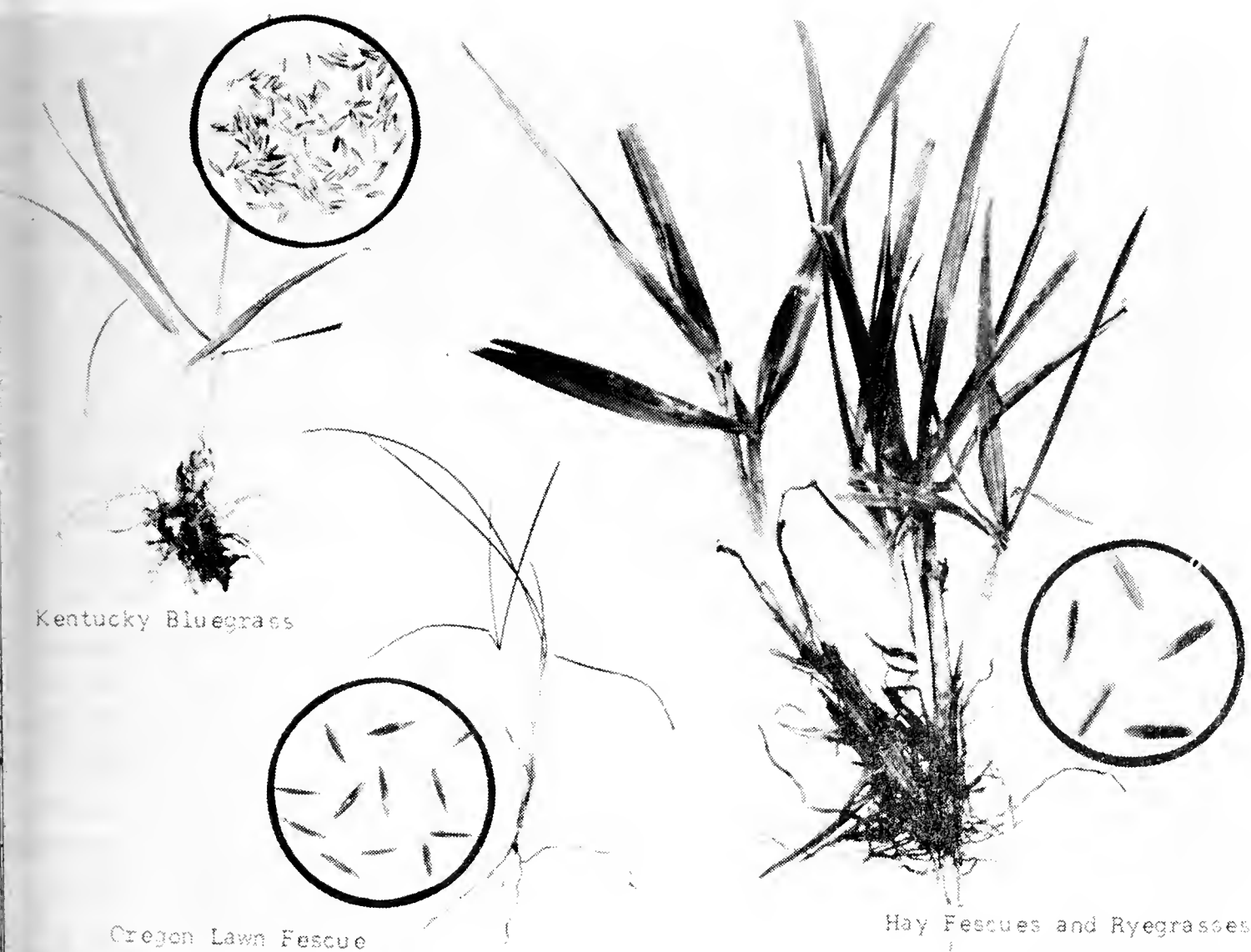
In these earlier days in America, *Poa pratensis* was highly regarded chiefly as a pasture and forage grass. In the process of conquering a wilderness, the colonists found scant time for planting or tending lawns; rather, their every effort was directed towards producing food and materials for an expanding economy. In this fight for survival *Poa pratensis* played its part, nurturing the herds and claiming raw soil newly turned. Especially on the rich phosphatic soils of northcentral Kentucky was its growth superlative. There it supported a livestock industry continuing to this day, and there it received its common name "Kentucky" bluegrass. Prior to the early 1800s and its support of a flourishing economy

in the Lexington area of Kentucky, had been known by a number of names including English grass, but not Kentucky bluegrass.

In the last century *Poa pratensis* has become even more widely dispersed in North America. Its importance as hay and pasture grass has given way somewhat before the selection and breeding of some of the forage species. But the very attributes that made it an outstanding pasture grass for the colonists, also make it an outstanding lawn grass for the better lawns of modern North America.

Here are some of the outstanding features of Kentucky bluegrass:

1. *Turf texture.* Kentucky bluegrass leaves are narrow bladed, with a crisp firm body, dark green gloss color, and delicate spoon-like tip. There are usually 4 to 6 green leaves, on a gracefully arching upright stem. As a new leaf forms at the tip, an older one dies at the base, so that there is continuous replacement of fresh, attractive young foliage.
2. *Growth Pattern.* The upright arrangement of the leafy stems of Kentucky bluegrass distinguishes the grass from the trailing kind, such as bent (*Agrostis*) and bermuda (*Cynodon*). As a result the tips of leaves cut in mowing settle down between the leaves and stems to reach the soil where they decay rather readily. In contrast to the trailing grasses, which build up thick mats of stems and leaves, the bluegrasses seldom need thinning out or combing away of the decayed remains. Consequently, they afford easier maintenance than many other lawn species.



Quality grass results only from proper seed. The fine lawn-grasses, Kentucky bluegrass and Oregon fescues, contrast with the coarse tall fescues and ryegrass. Seeds pictured are proportional to their frequency per pound: bluegrass-lawn fescue blends afford many more seeds than do cheap ryegrass mixtures.

Spreads by rhizomes. Each bluegrass stem will eventually terminate in a seedhead (about 20% of the stems may form seed each year). But there are constantly arising from the base of the stems, buds which produce other upright stems (tillers), or creeping underground stems called rhizomes. It is the latter that lace into a network of plants providing the firmest sod of almost any grass. There are two advantages to this spreading. One is that a single seed (or original plant) can enlarge greatly, filling in much adjacent bare area. Bluegrass is thus an excellent colonizer and expander. Secondly, the tightly woven sod makes an excellent turf, which holds the soil well and improves it each year as many of the finer rootlets die adding their organic materials to the soil.

4. *Size of seed.* Bluegrass seeds are small by comparison to the hay grasses, running over two million to the pound. Because there are so many seeds light seeding rates will suffice (2 pounds per 1000 square feet makes an excellent stand quickly). Bluegrass thus proves one of the most economical lawn grasses available.

A great many new selections of Kentucky bluegrass have been made in North America as well as Northern Europe. None, however, are yet as widely used as is the volunteer bluegrass which has been in the fields for years and years. Seedsman term this natural Kentucky bluegrass. Since it has survived well in the field with little attention, it also proves durable in the lawn. There is enough natural variability in grass harvested from these fields that complete killing out of a lawn turf is unlikely, compared to uni-

form selected strains that do not deviate from the parent type. Thus, just as we believe in the desirability of including Oregon red fescue varieties (*Festuca rubra*) in a bluegrass seed mixture, to broaden its adaptedness, so we also feel that selected bluegrass varieties are best used mixed with natural Kentucky bluegrass.

Poa pratensis does best on better soils, as would be expected. It does not need a great deal of watering, and can actually brown completely in summer only to spring back a luxuriant full sod with the first rains of autumn. Few other turfgrasses are so durable.

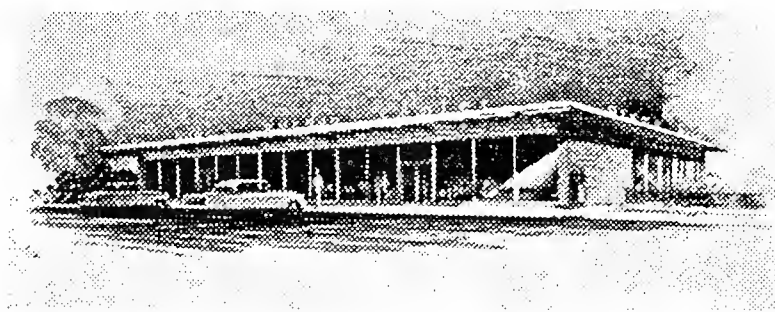
Bluegrass prefers that the mower be set rather high, at least where the summers are warm. One and a half to three inches are usually recommended in the midwest of America. This allows enough leaf to remain after mowing to build up food reserves, and causes the roots to grow deeper.

Most lawns in the "Bluegrass Zone"

of North America utilize a mixture of species and varieties. While natural Kentucky bluegrass makes an excellent turf by itself, the varieties of red fescue (*Festuca rubra*) which come mainly from Oregon are excellent companions. These have the same fine attributes listed above for Kentucky bluegrass, and the red fescues respond to the same type of treatment. They are especially useful where soils are not rich; they can also endure a good deal of shade and dryness. By mixing a fair proportion of the red fescues with the Kentucky bluegrasses one is assured of a wider range of adaptation for the variable conditions found in any lawn (shade, hot slopes, dry spots, sand outcrops, etc.). The chief varieties produced in the United States are Chewings, Illahee, Pennlawn and Rainier. The chief bluegrass varieties, in addition to natural Kentucky bluegrass are Delta, Merion, Newport, Park, and others which are just beginning to reach the market.

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Question: What is a good sour cherry for Denver.

Answer: Montmorency has proved to be very satisfactory in this area, and is widely planted here. Early Richmond is also an old standby. English Morello is less common, but is a good cherry. It is smaller and more compact in growth than the others, but is also shorter-lived.

Question: How soon should I uncover my roses? They are mounded with dirt.

Answer: Do not uncover your roses before the first of April, after growth has started; then remove the dirt gradually. Don't be in too big a hurry to remove any mulches — our late frosts can be damaging. Many heavy mulches should not be removed before the middle of April, and then should be removed gradually.

Question: What is a "piggy-back" plant?

Answer: This is the common name for a novelty house plant, *Tolmiea menziesii*. It is so-named because small plantlets are produced on the leaves. This plant is also known as "pick-back plant" and "mother of thousands."

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IN OUR LIBRARY

Modern Gardens, Peter Shephard. Frederick A. Praeger, 1954.

Through the use of many photographs the author brings to the reader outstanding examples of gardens and landscaping of homes located not only in the United States, but in Sweden, Denmark, Brazil, England, and others. Plans and text accompany the illustrations.

Creative Gardens, James C. Rose. Reinhold, 1958.

Mr. Rose separates the garden from the house for purpose of analysis. He then discusses the usual house plus garden, wherein the garden is an afterthought that generally suffers from a tired budget. He finally illustrates, with specific examples, the complete fusion of house and landscape. Useful construction information and plans accompany the handsome photographs.

—M.B.H.

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Composting

BY MRS. JOHN SCOTT

The right speaker can be the difference between boom and doom for your club. And what's right for you isn't necessarily right for another group. In the Autumn, 1959, issue of the *Colorado Composter*, Mrs. James Tillotson had an apt article, "Main Springs," which it would be well for you Federated Gardeners to review. Mrs. Tillotson, a popular and versatile speaker, asks program chairmen to always consider the needs, wants and abilities of the members. This puts the program chairman in the position of mediator or go-between. It furthermore puts the proposed speaker in competition with the entertainment world and paid lecturers, as most passive audiences are accustomed to being played-up to. Understandably, there's a bit of reluctance among some tried, true but tired speakers. Why not retire a few of them for a time and try someone new? "But, who?" you chorus in minor tones.

Take note, Program Chairman, of the business and professional people in your own area. Is your publicity sparse? There's a newspaper person, journalism teacher or writer who would be willing to tell you how to make the press and influence advertisers.

Is your therapy limping. There's a nurse (practical, public, special, registered or retired) who's been dreaming of directing your dealings with dependents—aged, ill, crippled, etc.

Is your scientific research sidetracked? Here's where the commercial companies can come to your club. Their men are *paid* specialists. They'll have film slides, booklets, and samples.

And if this isn't cause for celebration, try tapping trained talkers from civic clubs, chambers of commerce, colleges, transportation companies, plant societies, county agents, specialists (nursery men, landscape architects, arborists, florists, etc.), and hobbyists (interior decorating, ceramics, sculpture, design, art, painting, etc.).

Speakers should spark any program now and then. They are especially valuable to new clubs, assuring members of ready-made, worthwhile programs. Aspiring gardeners can acquire a broad view of the field via speakers, while seasoned gardeners enjoy a new slant or a different twist of an old subject.

But not all club members want to be done-*unto*, like The Sit and Sipper. More want to do *unto* others. For the latter, I heartily recommend our youth 4-H in particular, as National 4-H Club Week is March 5-12 this year. Purpose: "To inform more people—especially youth and parents—about 4-H educational aims and methods, and opportunities open to other young men and women. County 4-H Agents (usually in the same office as the County Agricultural and Home Demonstration Agents) will gladly give the particulars of the 4-H program and its varied projects, some of which are: home beautification (flower lawn, landscaping); entomology (insex-courtesy Art Linkletter); forestry and gardening.

Previously we have listed, primarily, non-horticultural speakers for our garden club meetings. But let's become Jane Appleseeds and recommend some of our best speakers on gardening to the non-horticultural organizations to which we belong.

You've no doubt heard, and maybe quoted, that old refrain, "What difference does it make what church we belong to, we're all seeking the same

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eward?" Let's apply this to our immediate inner-club relations; The Men's Garden Club, Turf Advisory Council, Flower Growers, Inc., United Florists, Seedsmen, naturalists, foresters and on and on. Program Chairman, wouldn't you just love to promote an exchange of speakers and see how the other half sings?

How are you going to dig up these speakers for here, there and everywhere? Grow your own. Within your membership are one or more potential speakers. Determine their principal interest, nurture it with research, fertilize with pictures, slides, films, specimens, literature, "throw-aways", etc. (we learn with all our senses; not only sight and hearing, but touching, smelling and tasting) and groom this future speaker by listening to her within your own and other tolerant groups until she's ready for the big time.

Big time? It's the biggest, yet. Time is shorter than you think, too. You're being reminded of the Colorado Garden Show, April 7-10 at the Denver Coliseum. There are tickets, yes; money is the laff of life. But people are wanted more than purses. This is the occasion for a coketail, cocktail or covered-dish for your neighbors, relatives or those people you've owed a pay-back, or—well, too long. Then, all together to the Show.

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Restauranteurs place heavy emphasis on the interior decorations of their establishments. They have found that pleasant surroundings and atmosphere are essential to customer satisfaction. How does your outdoor dining area, the patio, rate in this respect? If you need new and exciting ideas on well designed patios, plan to attend our "Designed for Garden Living," tour July 13 and 14.

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Colorado Forestry and Horticulture Association

ANNUAL REPORT FOR 1959

COMMITTEE ACTIVITIES

Board of Trustees—Met 12 times during the year with an average attendance of 20 members. At each meeting the activities of the Association were reviewed. Committee reports were heard, and appropriate action taken in regard to them. Most of these items are covered in the following committee reports.

Finance Committee — Met monthly, reviewing the Association's budget and making recommendations for the expenditure of Association funds. Its final report shows that the organization ended the year with a loss. Clark Blickensderfer, treasurer, served as chairman of this committee.

House Committee — This is a cooperative committee including members of the Botanic Gardens, Colorado Forestry and Horticulture Association and the Colorado Federation of Garden Clubs. Mrs. McLister headed the committee composed of Mr. Johnson, Mrs. Waring, Mrs. Honnen, Mrs. Nickels, Dr. Hildreth, and Pat Gallavan. This committee coordinated the moving of the three organizations into Botanic Gardens House. They met when necessary, formulating rules and regulations for use of the house and reviewing all extraordinary repairs and alterations to the house.

Plant Auction Committee—This committee, with Ken Wilmore and Mrs. Hudson Moore, Jr., as co-chairmen, staged a very successful 2 day auction May 2 and 3. Luncheon was served on the 2nd and a white elephant booth and a bedding plant booth were maintained in addition to the auction. Harry Nix, Herb Gundell and Pat Gallavan served as auctioneers. Net proceeds from this endeavor were \$1360.00.

Look and Learn Tours — With Mr. Barbour and Mrs. Catherwood as co-chairmen, this year's Centennial Tours were a great success. Active as co-chairmen of ticket sales were Miss Sally Davis and Mrs. George Hayden. Twelve gardens were shown on 2 consecutive days, July 13 and 14, and were visited by approximately 600 persons. Proceeds were \$2093.97.

Telephone Committee — Under the chairmanship of Mrs. Newman helped greatly in the sale of tickets for the Garden Tours and the Chuc Wagon Round Up.

Publicity Committee — Through its chairman, Mrs. Liz McLister, publicity was tied in with Centennial activities and was carried out by the staff and by the individual committee chairmen. Thanks to the cooperation of the Denver Post, the Rocky Mountain News and many local papers, all of our activities received good publicity. In addition the Association received weekly publicity from The Green Thumb program on KLZ radio.

Library Committee — Our library has received considerable attention this year with Mrs. Knox as chairman. Many of the ladies who have volunteered as hostesses have spent considerable time checking shelves, pasting book plates and card pockets in our books and stamping books. Much of this activity was supervised by Mrs. Hellriegel, professional librarian who has contributed two days a week of her time to our library.

Membership Committee — Clyde Learned, chairman. The Association has experienced a 50% increase in membership this year. Mr. Learned has personally accounted

for 205 of these members. A Garden Club and Commercial membership was introduced this year and brought in approximately 700 memberships. Radio and newspaper publicity accounted for 300 additional memberships.

reet and Shade Tree Committee — This committee met twice this year, both times to consider the suit pending in the State Supreme Court regarding the widening of Colorado Boulevard at City Park. Several members attended a hearing of this case January 4, 1960. It is expected that the Judges will hand down their decision shortly.

ducational Committee — As a committee this group presented two programs at Botanic Gardens House. Both were of excellent quality. Fred Johnson secured the speakers who were Dr. Belknap, speaking on "Cities and Gardens of Africa," and Mr. Schwan who spoke on "Iraq and Its Range Management Prob-

lems." This series will continue in 1960. In addition, the educational program by the staff was coordinated with this committee. A review of these activities will be found in the Staff Report.

Luncheon Committee — Mrs. Enos and her daughter, Becky Wood, were the committee, and furnished fine luncheons at each of the Board of Trustees' meetings.

Editorial Committee — With M. Walter Pesman as chairman, this committee met monthly, reviewing and advising our editor of materials for The Green Thumb magazine. Ten issues were produced within the allotted budget. In addition, members of this group submitted many articles for The Green Thumb.

Chuck Wagon Round Up Committee — This committee, with Mrs. Conrad and Herb Gundell as co-chairmen, started out as an idea for renewal of the annual picnic and wound up as a fund raising endeavor

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for the Botanic Gardens House Fund. Mrs. Conrad worked hard and came up with a terrific home cooked chuck wagon meal. This activity raised \$300.00.

Staff Report — Our major project was moving the library and other properties of the Association from 1355 Bannock to our new quarters at 909 York. Once in and established, it was found that we had many more visitors than at Horticulture House. With the increased activity, schedules had to be readjusted constantly in order to maintain the educational services of past years. Our manager

reports that he talked to some groups, mainly garden clubs and civic organizations. He produced programs for The Green Thumb KLZ radio. He and his staff answered some 5000 phone calls and mailed out pamphlets and answers to some 3500 persons. This, of course, was in addition to producing 10 issues of The Green Thumb and participating in most of the committee activities. He also reports that the Association has cooperated with many allied groups and organizations in joint educational programs that have helped stimulate gardening in our area.

As a non-profit educational organization, our Association is earnestly trying to help home owners, gardeners, and horticulturists cope with our peculiar climate and growing conditions.

Without aid from city, state, or national government, we depend upon memberships and tax exempt private contributions to balance the budget.

Some of us are raising our memberships from the minimum of three dollars to five or twenty-five dollars. It all helps the cause that is near to us.

Some of us feel that we can help by leaving a lump sum in trust from our estate. The income from such a trust fund can be used for regular expenses.

At our request, an experienced attorney has compounded this prescription for a simple, do-it-yourself codicil.

In order to make sure that your memory is kept dear, you do not have to wait until you make a new will.

After dinner this evening, after church next Sunday or during any fifteen minute lull this week, sit down at your home or at your office with any two persons who are not named in your will.

You don't need a lawyer, you don't need a Notary Public. Just sign your three names on this Codicil.

Then put it in a safe place, preferably attached to your will.

CODICIL

I, _____, of _____

City

_____, hereby make, publish and declare this to be a Codicil to my Last Will and Testament, which, in all other respects, I hereby confirm:

State

I bequeath to the Colorado Forestry and Horticulture Association, a Colorado corporation, the sum of _____ dollars (\$ _____).

IN WITNESS WHEREOF I have hereunto set my hand and seal this _____ of _____, 19_____.

In the presence of each of us, on the day above indicated, the foregoing instrument was signed and published, and was declared to be a Codicil as above stated, by the aforesaid maker. We hereunto subscribe as attesting witnesses in the presence of the maker and of each other.

Address: _____

Address: _____

Seasonal Suggestions

BY PAT

For one swallow does not make spring, nor yet one fine day. — Aristotle. Ethic 1.6.



GARDEN PLAT



PLANT SEEDS



DORMANT SPRAY

Civilization has changed considerably since Aristotle's time, but the weather observation he made centuries ago still holds true. March is noted for its changeable weather and is a problem month to gardeners. It is, however, an important time for gardening if we can learn to roll with its punches. Of course, this means planning but there will be numerous inclement days for this.

Out of doors probably the most important job is the preparation of soil for lawns and flower beds. This can be done as soon as the frost is out of the ground and the soil is workable. Complete replacement of six to eight inches of soil with good top soil would be an excellent idea, provided one could afford it and could find enough good top soil available. In most cases such replacement is not feasible, but we can do much to convert the soil we already have into a better growing medium. Basically our soils are rich in minerals but very deficient in organic matter. This can be corrected by the addition of at least 2 yards of manure per 1000 square feet. This should be spaded or plowed in to a depth of 8 to 10 inches and mixed well with the soil. The soil can then be rough graded and allowed to set until planting time. For lawns, experience has taught us that there is no particular advantage in sowing seed until the middle of April. Annuals and vegetables for the most part are not planted until late May.

Next in importance is the planting of dormant bare root nursery stock which will be available in the latter part of the month at all the local nurseries and garden shops. Here again, soil preparation is the key to success. Whether it is a tree, shrub or rose, dig a hole large enough to receive the complete root system of the plant spread out in its natural form. The soil taken from the hole should be modified by adding peat moss, 1/3 by volume, to it before it is placed around the plant.

Other chores outside during March might include a clean up of the debris blown in over winter, leveling walks that have been heaved by the frost, repairing fences and other such items.

Older trees and shrubs can be pruned and shaped now. A special effort should be made to



remove all the stubs and broken branches so that they will not provide a breeding place for insects and diseases. Dormant sprays to control scale insects can be applied to elms, lilacs and other plants infested with these pests.

Indoors it's time to plant seeds for bedding plants. There is a complete article on this subject on page 54. One word of caution on seed growing projects, don't start unless you have plenty of window space for the transplants once the seeds have sprouted.

Another indoor activity might be the repair of garden tools and equipment. Sharpen your spades and other cultivating tools. Check your hoses for leaks and repair them if necessary. Lawn mowing season is just around the corner, so be sure to check your mower. If it needs sharpening, send it out now before the spring rush begins.

This is also the season for itinerate peddlers of nursery stock, sprays, top soil and fertilizer. Many of these persons are out and out frauds. We've had calls in the past from people who have bought large trees balled and burlaped only to receive a chopped off tree devoid of roots in a bag of dirt. Others have had their trees sprayed with canned milk and crankcase oil for fancy prices. Another favorite trick is to spread sheep manure on top of a light snow to make it appear that large quantities at high prices were used, whereas, in reality, a very small amount is required to achieve this effect. The Better Business Bureau slogan, "If you don't know your merchandise, be sure to know your merchant," is a good one for gardeners to follow this season of the year.



Take time to look at other gardens and the public parks. You'll be pleasantly surprised by the early flowers like crocus, hyacinths, and species tulips, and a few shrubs like forsythia, flowering quince and flowering almond that put out in late March.

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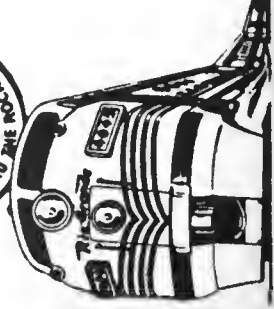
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The Green Thumb

Magazine for Rocky Mountain Gardeners



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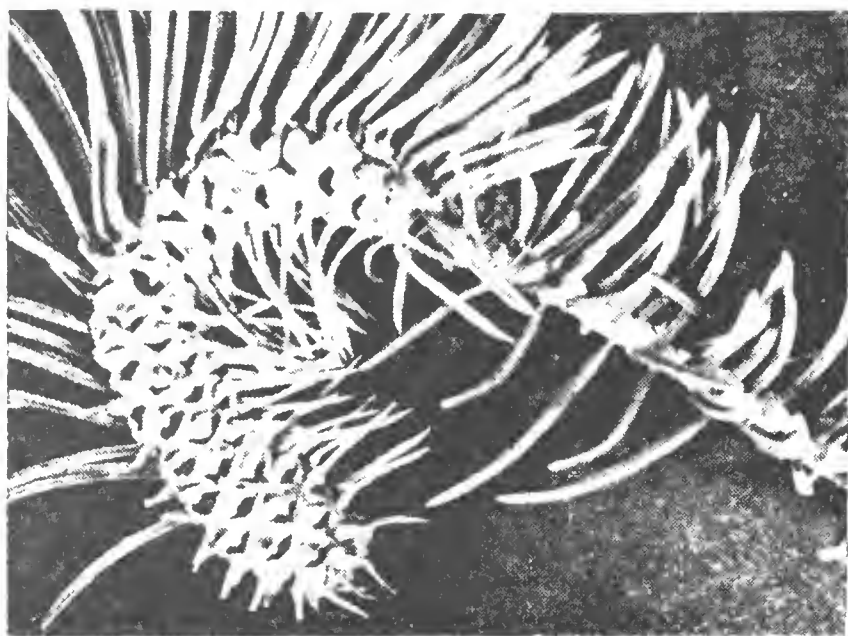
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Organized in 1884

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*Calendar
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Events*

The Green Thumb Program—Every Saturday morning on KLZ Radio at 10:15 a.m.

Fun with Flowers—A lecture and demonstration is followed by the making of arrangements. Each person brings containers, mechanics, and material. The workshops are open to everyone. They will be held each month at the following times and places:

Workshop I. Botanic Gardens House, 909 York Street, Denver. Third Wednesday, 9:30 a.m.

Workshop II. Lakeside Denver Dry Goods, 44th and Harlan, Denver. First Friday, 10 a.m.

Workshop III. Arapahoe County Fair Grounds, Littleton. Third Tuesday, 9:30 a.m.

Floral Art Course: — Opportunity School. Every Thursday 9 a.m.-11:30 a.m., 1 p.m.-3:30 p.m., 6:30 p.m.-9:15 p.m. There is no charge except for materials.

BOTANIC GARDENS HOUSE MEETING

909 York Street

April 5—Mountain View Garden Club, 1 p.m.

April 6—Botany Club, 7:30 p.m.

April 7—Orchid Society, 7:45 p.m.

April 8—Colorado Forestry and Horticulture Association Finance Committee, 10:30 a.m.

April 8—Colorado Forestry and Horticulture Association Board Luncheon, 11:30 a.m.

April 11—Judges' Council, 10 a.m.

April 12—Evergreen Garden Club, 7:30 p.m.

April 13—Organic Gardeners, 8 p.m.

April 14—Tea for Colorado Federation of Garden Clubs State Offices, 1 p.m.

April 14—Rose Society, 7 p.m.

April 18—Green Thumb Garden Club, 12:30 p.m.

April 18—Botanic Gardens Board Supper, 7 p.m.

April 20—Fun with Flowers Workshop, 9:30 a.m.

April 25—Flower Show School.


April 25—Bluebird's tour of Home and Gardens, 4 p.m.

April 26—Flower Show School.

April 27—Flower Show School

April 28—Civic Garden Club, 1 p.m.

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THE TREE FOR YOUR HOME

BY MRS. WILLIAM CRISP

There is nothing that gives a house more the appearance of being well-established than a stately elm, a massive oak or a tall spreading maple standing guard over it. Such trees give welcome and decorative shade, cooling the house and they dim the glare of brand new construction.

If you are lucky enough to find handsome trees on the plot you purchase, plan around them. To cut down a tree, unless it is absolutely necessary is a desecration of nature.

If your house is in a new development area in which builders seem to think it best to remove every vestige of greenery before beginning to work, trees are certainly a necessity. Be careful if the plot is small, not to have too many trees.

It may seem superfluous to say that trees become large and take room to grow. They draw nourishment from the soil and keep the sun from your flowers. These are not serious objections, but we should recognize them.

Trees should be planned for and installed before anything else is done about the grounds. A really good tree is expensive, so it is best to take care of this large item of expense first, even though further work on your grounds may be retarded. It is not wise to buy very large trees. Buy one young enough that it can adapt itself to the conditions in which it is to live. A tree eight to ten feet high is regarded as a good investment.

In choosing a tree to frame a house, its character and size should give the effect needed and fit the size and style of the house. In general taller trees in the rear as background are proper while a small low-headed tree in the front of the house will be more effective. When well placed a tree may serve for framing and shade at the same time. A high headed tree will

furnish an umbrella over the area and not interfere with important views.

Trees that serve as a covering to a house, or an overhanging shelter or framework become large trees. How large the tree should become will be determined by the size of the house or its position with respect to the house.

To frame the house choose a deciduous tree rather than an evergreen, because it will not shut out light during the short days in winter and it gives protection from the heat in summer. Do not plant the tree too near the house. If it needs spraying the chemicals may mar the finish of the building.

The roots may become a source of trouble. For example, the weeping willow has roots which are often the cause of dislodging pipes or clogging sewer pipes. The elm, the poplar, and the soft maple as they grow older sometimes do damage to walks and fences.

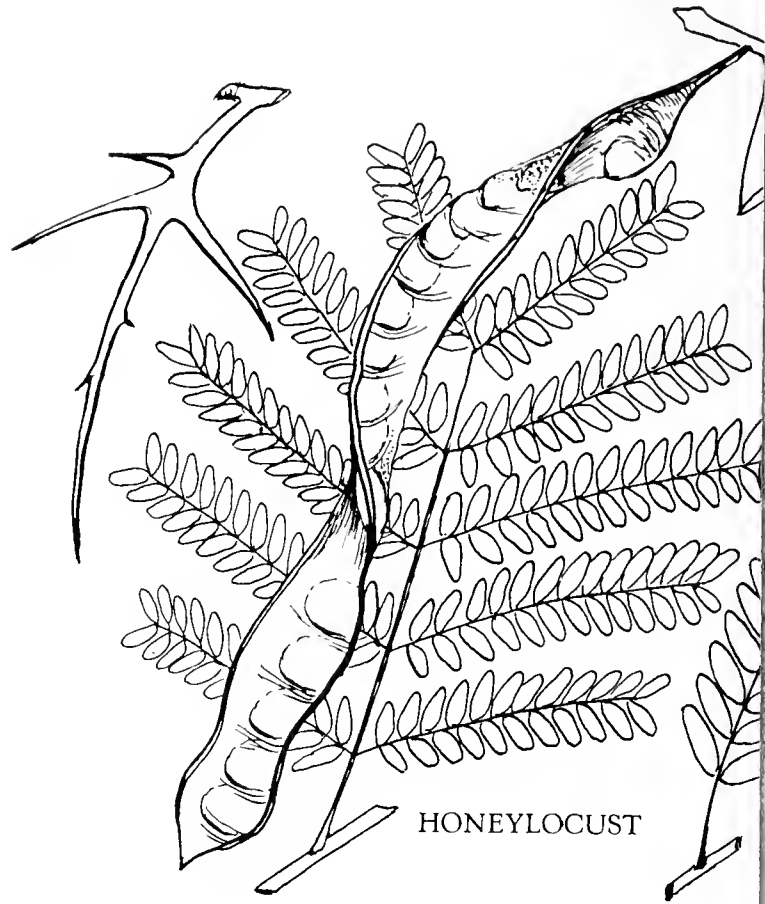
A rapidly growing tree may soon get out of scale and dwarf an attractive cottage. Consider the area the tree will cover as it grows. Grass will not grow beneath the branches of a tree with heavy foliage.

Trees that taper toward the tip will accentuate the width and breadth of the house. Spreading trees such as the feathery honey locust will emphasize its height.

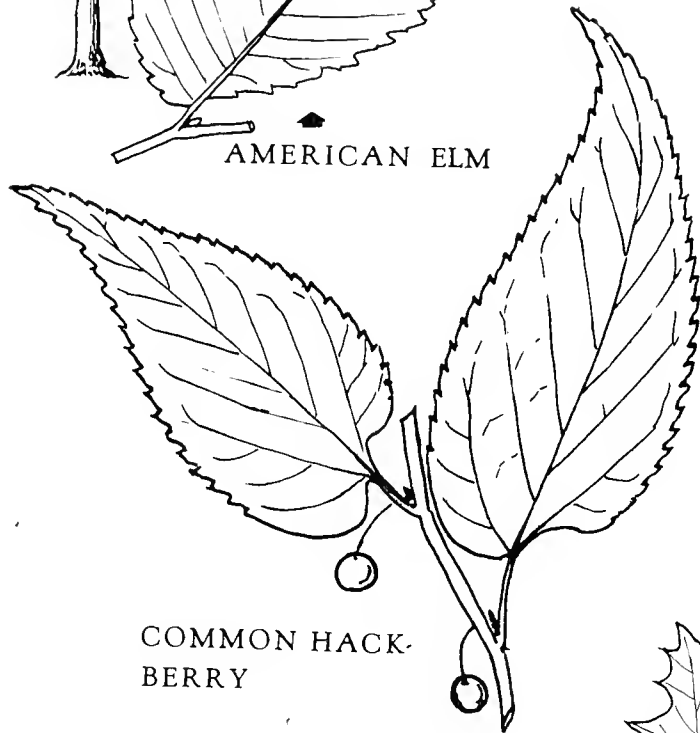
A pleasant effect can be obtained upon the lawn by considering the tree shadows. In planting a tree, place it where the shadow will fall on the right place. It is necessary to make note of the position of the sun during the change of the seasons. If you want a certain area to be shaded on a summer morning, it must be southwest of the tree on which you are depending for shade. If shade is desired on a summer afternoon, the shaded area should be southeast of the tree.



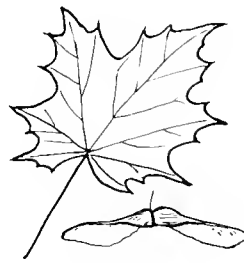
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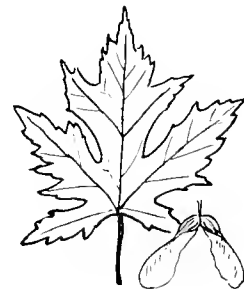
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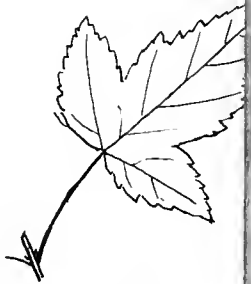
COMMON HACK-
BERRY



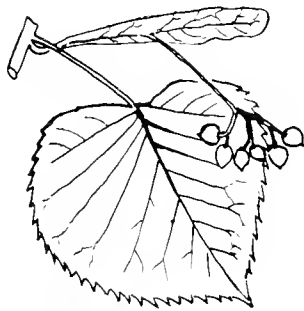
NORWAY MAPLE



SILVER or SOFT MAPLE



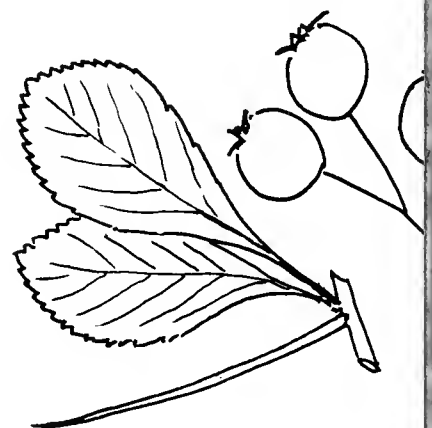
AMUR MAPLE



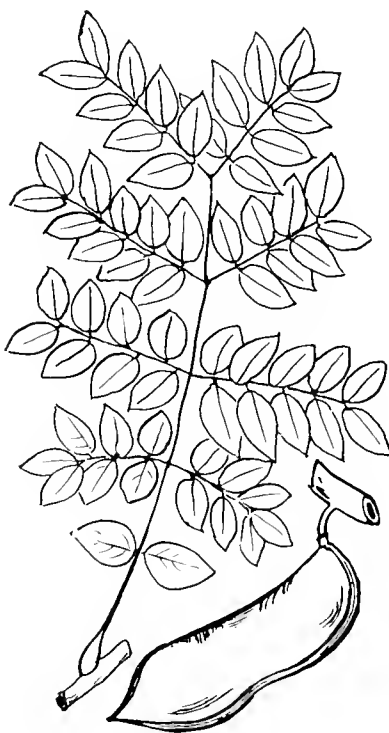
AMERICAN LINDEN



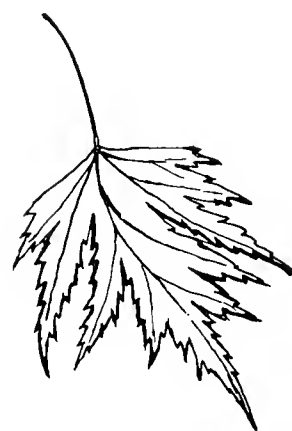
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KENTUCKY COFFEETREE



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An open umbrella attached to the end of a stick inserted in the ground will indicate approximately where the shadows will fall at various times of the day. This will enable you to plan the position of the shadows.

Avoid the urge to pick the tree that grows the fastest. Necessary shade may be obtained just as fast from a smaller tree which, as it grows, will not dwarf your house.

The following are trees that have proved themselves adaptable to the growing conditions in Colorado:

The thornless honey locust, *Gleditsia triacanthos*, 50 to 75 feet, hardy and drought resistant, slow growing. Its feather-like foliage produces light shade. Picturesque shape. Long feathery pods remain on the tree after the leaves fall. Good specimens of this tree may be seen on Monaco Boulevard near 6th Avenue.

The hackberry, *Celtis occidentalis*, 50 feet, elm-like, resists drought. Once established will withstand very adverse conditions. Irregular crooked twigs give it an interesting appearance in winter. The tree bears blackish cherry-like fruits the size of peas. A row of these trees may be seen in the parking lot on Sherman Street north of the Capitol building.

The Kentucky Coffee tree, *Gymnocladus dioica*, 50 feet, slow growing, well shaped tree, hardy and almost pest free. Has interesting winter characteristics. Fine specimens are growing on the north side of Cheesman Park.

The American linden, *Tilia americana*, 50 to 60 feet, slow growing, has dense foliage, fragrant flowers, and interesting winged fruits which are carried readily by the wind. If you want to get acquainted with this beautiful tree, take a walk through linden lane on the west side of Cheesman Park.

The Norway maple, *Acer platanoides*, 40 to 60 feet, is a desirable tree. It should be planted more frequently.

Slow growing with dense foliage. A fine row of the Schwedler variety having reddish foliage in the spring may be seen in the parking at the State Historical Museum on 14th and Sherman Streets. They are most attractive when in bloom in the spring.

The American elm, *Ulmus americana*, 50 to 80 feet, grows readily. Its vase shaped branching and luxuriant foliage in the summer make it excellent for shade. In spring a flush of purple spreads over the tree when it is in bloom, the first in the flower procession. Then come little green seeds winged for flight. These ripen and scatter before the leaves are open. The tree must be sprayed to control scale insects and aphids.

The soft maple, *Acer saccharinum*, 75 feet, medium rate of growth, has brittle branches, easily damaged by snow. It is not too desirable for small home sites.

Lesser trees in size for small properties are the Amur maple, *Acer ginnale*, 25 feet; the cutleaf birch, *Betula pendula*, 30-50 feet; cockspur hawthorn, *Crataegus crusgalli*, 20 feet; Washington hawthorn, *Crataegus cordata*, 30 feet; Goldenrain tree, *Koeleria paniculata*, 25 feet; and crabapple, *Malus* in variety, 30 feet.

Flowering trees are effective when used at the corner of a house or terrace. This often makes a small house appear much larger. However, sufficient room must be allowed for growth. Often trees and shrubs are planted too close to windows, innocent looking in the beginning but becoming monstrosities later and crowding out the view.

On a small property it is better not to plant flowering trees as specimen trees in the lawn where the unbroken area can give a feeling of space. In general, the average size tree to be selected should be in direct proportion to the size of the house. Plant the right tree and make your house a home.

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He provideth a kindness for many generations,
And faces that he hath not seen shall bless him.”

—Henry Van Dyke

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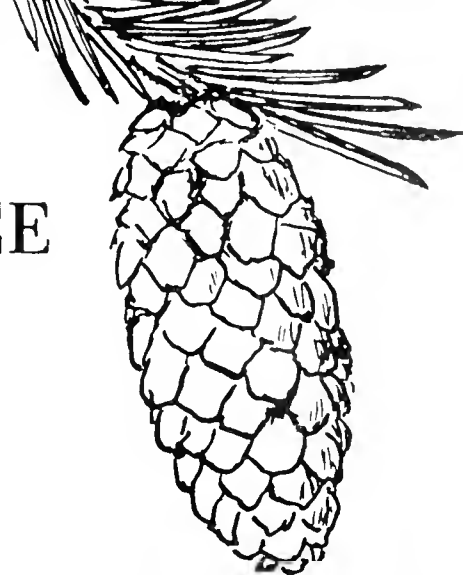
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THE COLORADO BLUE SPRUCE

BY RICHARD G. BEIDLEMAN

*Zoology Department, Colorado College,
Colorado Springs, Colo.*



Dr. Richard G. Beidleman is an Associate Professor of Zoology at Colorado College. He has specialized in animal ecology and through his researches into the history of changes in plant and animal distribution, has compiled a most interesting record of which this article is a part. Dr. Beidleman is pleasantly remembered by all the fortunate people who attended our annual meeting where he gave such an informative and excellent lecture, illustrated with his excellent slides.

IN THE summer of 1862 Charles Christopher Parry was as busy hammering over the Colorado Rockies as any get-rich-quick gold miner. But Parry wouldn't have stooped for a nugget if he'd stumbled over one; his pans were too filled with flowers. This English doctor from Davenport, Iowa, called the "Father of Colorado Botany" by his British compeers during our early territorial days, spread the good word about the wonders of Colorado from Maine to California in a flurry of newspaper articles. And, more important, he gave the Centennial State a symbol which would advertise it long after the name of "Parry" had been forgotten by all but the botanical world.

On July 1 of 1862, Parry and his guide, M. S. Beach of Colorado City, headed towards Pike's Peak from Manitou Springs, in what was to be the first ascent of that fourteen thousand foot peak by a professional botanist since Edwin James of the Long Expedition first collected alpine flowers there forty-two years before. Somewhere on the lower flanks of ponderosa pine and Douglas-fir, beside one of the streams that drew its water from the mountainside, Parry collected specimens of a magnificent new spruce tree.

Parry's spruce, or more familiarly the Colorado blue spruce, proved to have the least valuable timber among the world's spruce. Its sharp-needed

branches offered no comfortable mattresses for sleepy campers and its four-inch cones no meaty nuts for hungry hikers. But this stately conifer, with its blue-frosted foliage, has carried the name and mountain fame of its native Colorado into parks and yards the globe around.

From seeds collected in 1862 by Parry himself, seedling blue spruce sprouted far from home in 1863 at Professor Sargent's garden in Brookline, Massachusetts and at the nearby Arnold Arboretum. As recently as 1929 one of Parry's originals was still growing at the Arboretum, though its lower boughs had long since fallen and only a cluster of living branches remained at the crown. Transplantings thrived in Parry's Iowa; a nursery in Waukegan, Illinois, began to lay in a supply of the attractive conifers; and in 1877 a Mr. Waterer started them in his nursery at Knap Hill, England, by cuttings from Sargent's trees in Brookline. Most of the old blue spruce in England today date back to Waterer's nursery. After Parry, Roezl collected seeds in Colorado, and from these many of the early plantings on the European continent originated.

Through the years horticulturists experimented with this ornamental spruce, grafting it in various ways, especially to the Norway spruce, and producing a number of varieties. The most popular European form is the

Koster Blue Spruce which was developed at the nursery of Messrs. Koster and Company, Boskoop, Holland. In the nursery of Herr Weise at Kamenz in Saxony a long-needed variety originated which has been called the "Konig Albert von Sachsen," while back home at the Arnold Arboretum an interesting dwarf variety was produced about 1890. Within a half-century after Parry's discovery of the blue spruce, North American nurserymen were commenting that "no conifer of recent introduction has been so generally planted in the United States."

Originally the blue spruce or, variously, Parry's spruce, balsam, white spruce, silver spruce, prickly spruce, water spruce, and Colorado spruce, was given the scientific name *Abies menziesii* by George Engelmann, Saint Louis doctor, botanist, and adviser to western explorers. *Abies* is a generic group containing the true firs, and the species name "menziesii" was in honor of Archibald Menzies, the British botanist who accompanied Vancouver in his explorations along the West Coast. Subsequently, the tree was placed in the group containing the spruces, *Picea*, was named *Picea parryana* at one time in honor of its discoverer, and today is *Picea pungens*, the pungent spruce. The word "spruce," applied to this tree and its relatives, is certainly descriptive, meaning "something natty, smart and dandified."

"When young . . . there is no more beautiful object for symmetry or colour" than the Colorado blue spruce. These trees have chosen the edges of Rocky Mountain streams for their livelihood, never in extensive stands such as those of lodgepole pine, and the related Engelmann Spruce of the subalpine country, but rather a select scattering from the foothills up to nine thousand feet or so, from New Mexico to Montana but especially in Colorado.

Blue spruce needles are stiff and sharp, each set on a woody pedestal of the twig and covered with a bluish-

silver bloom. Whereas twiglets of Engelmann spruce are softened by a fine covering of "hair," the blue spruce has smooth twigs. During the frequent good cone years the dense treetops are clustered with the four-inch, papery cones which mature in a year, dropping their seeds in early autumn. By the time young trees reach the age of thirty years, the blue cast to the foliage usually has begun to fade. As blue spruce matures, they not only lose their colorfulness but drop lower branches and become scraggly. The bark, unlike that of the Engelmann, becomes cinnamon-gray scaled and deeply furrowed.

A tree of five inches in diameter may be over a hundred years old, and two feet in diameter well over 300 years. Old patriarchs may reach more than 600 years of age. Good specimens of blue spruce in Colorado will be close to a hundred feet in height and between a foot-and-a-half and two feet in diameter. The American Forestry Association's Colorado blue spruce record is a giant discovered by Fred R. Johnson of Denver in the central Colorado Gunnison National Forest, a tree 123 feet high and about 50 inches in diameter (breast high). Blue spruce wood has proved of little commercial value, being used only for rough house logs, mine timbers, posts and mountain railway ties. The real appeal of the blue spruce is its crisp beauty . . . and its attractiveness to bird life.

It is no surprise that in 1939 the beautiful Colorado blue spruce should have become the official state tree of the Centennial State; and the only surprise is that it didn't happen sooner. Sixteen years after statehood, and one year after Colorado picked her columbine state flower, members of the State Horticultural Society instituted a campaign to select a state tree. Two members of the Society whipped up a brochure on the various trees of the state, and it was suggested that the state's teachers go over the propaga-



A young, cultivated Blue Spruce grows within sight of its native mountain home on Colorado's Pikes Peak.

with their students. Following a sufficient period of indoctrination, there would be a balloting on Arbor Day of 1892 to determine the children's choice, as previously had been done with the state flower.

George L. Cannon, Jr., of East High school in Denver summed up the qualities which a state tree worthy of a wonderful mountain state should possess:

1. The tree selected should be taken from the mountain species.
2. Let some form be selected as characteristic of our mountain scenery.
3. The tree should be a familiar one.
4. The tree should possess marked beauty of form and coloring, lending itself readily to the various purposes of decorative art.
5. It should be a tree of practical

value, one of hardy nature, accommodating itself to a variety of situations.

6. If possible it should possess some historic or poetic quality that would arouse emotions of State patriotism.

The Colorado blue spruce made a magnificent candidate, and local exponents quickly voiced their journalistic approval: "Do you know that the most beautiful of all trees of the Rocky Mountains, and in some respects, the most beautiful conifer in the world, is . . . the *Colorado or blue spruce*? Its beauty is too rare to be common and hence, it is found nowhere outside of our State . . ." ". . . If we examine the long list of evergreen trees we cannot find one that grades higher in perfection of form, beauty, color, hardiness and adaptation to various sorts and conditions of climate . . ." ". . . It is

a question whether any tree containing so many desirable qualities can be found in this State . . .” “. . . When voting for a State tree the students of our public schools should not pass by this lovely namesake of Colorado . . .”

The campaign was taken to the school children on Arbor Day, April 15, 1892; and to no one's surprise, the blue spruce won by a landslide, with 16,931 votes. Villages like Eastonville, in view of Parry's Pike's Peak collecting grounds, threw their entire support, fifty-nine votes in this instance, to the blue spruce. Florissant, on the other side of the Peak, saved one of its fifty votes for the white fir. The fir, incidentally, ranked second in popularity in the state, with 780 votes, though most of the children failed to distinguish between the white fir, subalpine, and Douglas-fir. Unspecified pines ranked third with 732 votes, and then a lesser scattering of votes for the Engelmann spruce, cedar, cottonwood, box elder, maple, and aspen. Youngsters with out-of-state prejudices cast their votes for such foreigners as the catalpa, mulberry, hickory, apple, elm, and pear.

The report of this voting disappeared into the 8th Biennial Report of the State Superintendent of Public Instruction; and there the matter rested for almost half-a-century. Finally, in the winter of 1939 State Representatives Griffith, Smith and Kramer introduced a resolution into the state legislature, H. J. R. No. 7, which brought the blue spruce its due recognition:

Whereas, Colorado Blue Spruce (*Picea Pungens*) was first discovered on the slopes of Pikes Peak in 1862, and named by the noted botanist, Dr. C. C. Parry; and

Whereas, this species reaches optimum development in the State of Colorado and has been transplanted throughout many other sections of the United States and the World; and

Whereas, the school children of the State of Colorado voted in 1892 to name the Blue Spruce as the State Tree of Colorado;

Now, Therefore, Be It Resolved by the House of Representatives of the Thirty-second General Assembly of the State of Colorado, the Senate concurring herein:

That this action of the children of the state be officially recognized and that the House of Representatives and the Senate of the State of Colorado, by this resolution, officially designate Colorado Blue Spruce as the State Tree of Colorado.

On March 7, 1939, in the morning the resolution was signed by William E. Higby, Speaker of the House; and Colorado added to its state flower the Colorado Columbine and its state bird the Lark Bunting a most appropriate state tree, the Blue Spruce. Newspapers of the period, busy following Hitler rushing to destiny, can be forgiven for not rushing to acclaim the official sanction of an accepted state tradition.

In its first century, Parry's fir Pike's Peak conifer has carried the name of Colorado throughout the world; and as long as people love the beauty of an evergreen, our Colorado Blue Spruce will continue to advertise her western mountain homeland far and wide.

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Snow Damage to and by Trees

By DR. A. C. HILDRETH
Director Denver Botanic Gardens

THE unseasonable snow that struck Denver last fall (Sept. 29 to Oct. 2) caused unprecedented damage to the trees of the city. Although a similar snowstorm 23 years earlier (Sept. 26 to 28, 1936) took a heavy toll, the trees at that time were smaller and fewer in number and, therefore, there was less possibility of damage. The 1959 snow caught trees in full foliage. Without accompanying wind to displace it, the wet snow froze on the leaves as it fell, until its sheer weight broke branches and split crotches on a high percentage of the trees in Denver.

It is impossible to calculate the loss to the community occasioned by such tree damage. Who can evaluate beauty, or the pleasure and satisfaction that people derive from fine trees? Some idea of the monetary loss, however, may be had from figures compiled by those who had to salvage what they could from the wreckage and clean up the debris.

City Forester, George S. Stadler, estimated \$112,789 as the cost of repairing trees damaged by the storm in parks and parkways of the city. These areas contain approximately 10% of Denver's 250,000 trees. Assuming that trees both inside and outside these park areas suffered about equal snow damage, we can see that the cost of



putting all of Denver's trees in order after the storm is well over a million dollars. The Department of Public Works estimates \$340,000 as the cost of picking up, hauling and burning the broken branches from the city streets, parking strips, etc. This figure, of course, does not include the amounts paid to truckers by private citizens for removing brush from their premises.

A staggering amount of damage to other property was caused by the breaking and bending of trees during the storm. Few people realized that the trees, which had been Denver's pride, could be such instruments of destruction. The chief damage was to telephone and power lines. Limbs broken off or bent low by the snow brought down an enormous number of overhead wires. In metropolitan Denver the Mountain States Telephone and Telegraph Company estimates expenditures of \$250,000 for repairing lines damaged by trees during the storm, and the Public Service Company of Colorado estimated \$275,000 as the cost of repairing similar damage to their power lines in the area. In addition, falling limbs did considerable damage to houses, patios, fences and other structures. Insurance companies paid out thousands of dollars to satisfy claims for damage to parked cars caused by tree breakage.

It is evident that in the Denver metropolitan area, the monetary loss from damage to and by trees during the storm amounted to at least 2 million dollars to say nothing of the inconvenience of blocked traffic and interruption of telephone and electric power service. Such costs and inconveniences lead us to ask whether they are necessary and what we can do to prevent their recurrence or to reduce them to a minimum in future storms.

From the horticultural standpoint there seem to be five things that we might do to prevent or, at least, to minimize the loss to and by trees resulting from such early snows:

1. Plant species that are least susceptible to snow breakage.
2. By proper care of the trees throughout their lifetime, encourage a mechanically strong structure, normal growth and sound wood so that there will be less likelihood of breakage.
3. Cable or bolt old trees that have weak structure or have started to split, in order to prevent their breaking under the weight of snow.
4. Locate trees so that in case of breakage they will be less likely to cause damage to telephone and power lines and other property.
5. Select low-growing trees for planting under telephone and power lines so that there will be no heavy limbs to fall and break wires.

SUSCEPTIBILITY TO SNOW DAMAGE

But what trees are least susceptible to snow damage? The storm afforded a good opportunity to answer this question. Following the storm many trees of different species growing in Denver were examined and scored according to injury on a scale of 1 to 5 as follows:

1. None or insignificant damage.

2. Slight damage, mostly to minor branches. Little more than normal pruning treatment required.
3. Moderate injury, resulting from breaking several secondary branches and splitting of minor crotches.
4. Severe damage, resulting from breakage or splitting of the trunk or some of the main limbs, thus weakening the structure, distorting the shape and impairing the appearance and value of the tree for several years.
5. Extreme damage, resulting from breaking or splitting the trunk or several main branches, destroying the beauty of the tree and permanently impairing its usefulness. Such trees ordinarily require removal or drastic surgical treatment.

It is easy to overestimate the damage to a tree immediately after such a snowstorm. One is inclined to regard a confused mass of leafy, hanging branches as evidence of irreparable injury. After an experienced tree pruner has cleared away the wreckage, however, one is often surprised at the light actual damage to the tree. Putting together injury observations on a numerical basis made possible an unbiased appraisal of the injury and also an objective comparison of different species as regards snow damage.

In summary, it was found that the coniferous trees, such as spruce, fir, Douglas-fir, pine and juniper, suffered least breakage by snow. The normal structure of such trees, consisting of a strong vertical shaft from which numerous flexible lateral branches radiate, is ideal for resisting such snow damage. In such trees the weight is distributed on dozens of branches instead of being concentrated on a few major limbs as is the case in some common species of broadleafed trees. The long-conical shape of our conifers, particularly the spruces and firs, makes it possible for



**Black Walnut tree damaged by the storm
(Washington Park).**

the upper limbs to protect the lower ones from excessive snow accumulation and for the lower ones to support the upper ones bending under a load of snow. It is with trees of this shape that nature timbered the slopes of our high mountains and the far-north forests of the world, where heavy snows are commonplace.

Among coniferous trees there was more damage to junipers than to other kinds. Most of this damage was caused by spreading out of the branches. This trouble was most prevalent in the much-prized upright forms. Although there was practically no breaking or splitting of junipers during the storm, another wet snow falling on the spread-out branches probably would have caused extensive permanent injury. Careful tying up and pruning of the distorted branches is of course necessary to restore the normal shape of trees so affected. The sooner such corrective measures can be applied the better. Perhaps under our climatic conditions, junipers with drooping branches would be more suitable than upright forms.

Broadleaf trees, in general, suffered much greater damage than the conifers during the storm. No broadleaf species escaped injury but the damage was by

no means uniform for all species or even for different trees of the same species. One can find severely injured specimens as well as uninjured ones in every broadleaf species that has been extensively planted in the Denver area. In fact, anything that one might say as to the susceptibility or resistance of any species to snow damage can be eloquently refuted by individual trees which showed the opposite response to the storm. Of course, the first requirement in comparing species that show a wide variation is to include a large number of individuals in the comparison.

Strangely enough, broadleaf trees that showed the greatest resistance to snow damage were weeping forms such as weeping birch and weeping willow. Apparently the pendulous branches did not accumulate such a heavy weight of snow as those in the usual position. Furthermore, the flexible branches tend to bend rather than break under a load of snow.

The native cottonwood suffered some breakage particularly of partly decayed limbs. The total damage however was much less than might be expected in trees of such large size and mature age. Part of this lack of damage may be due to the habit of the cottonwood to prune itself. Although the old



Russian Olive broken by snow (Cheesman Park).

wood is very tough the young branches will break off readily with slight pressure from any cause. Thus these trees are constantly undergoing thinning out of their young growth, a process that keeps the new growth and leaf area in balance with the strength of the main limbs.

Next in order of damage is a group of species that sometimes showed severe injury but which on the average were resistant to snow damage—oaks, lindens, hackberries, rock elm (*Ulmus thomasi*) and honey locust. All species of this group tend toward the strong central leader growth habit, like the pines. Young, overvigorous individuals of these species, particularly of the honey locust, hackberry and oaks, were more liable to damage than trees growing at a normal rate for the species.

Well-established oaks perhaps suffered least injury of any broadleaved species, although there were notable exceptions among individual trees. Among bur oaks there was a tendency for vigorous top shoots to break, but the main framework was usually intact.

Mountain-ash and ornamental crab-apples generally showed little injury from the storm. Their near relatives, the hawthorns, were sometimes badly damaged, particularly the flat-topped varieties. Norway maple, despite its heavy foliage, was fairly resistant to snow breakage. Catalpa trees in good vigor showed very little injury, although on weak trees there was some breakage of large limbs.

Sycamore wood is brittle. These trees generally came off badly in the storm, losing both large and small branches, although there was great variation in the severity of damage to individual trees. Green ash showed a surprising amount of damage, being especially prone to splitting off large limbs from the trunk. Kentucky coffee-tree showed breakage of secondary and smaller branches on the few specimens available for observation. Black wal-

nut generally showed heavy breakage of both large and small branches.

Three broadleaved species most extensively planted—soft maple, American elm and Siberian elm—caused most of the damage to property, largely because they were more numerous. They also were badly injured by the snow, the Siberian elm being perhaps worse in this respect than any other tree planted in Denver.

The great variation in snow injury observed in trees of the same species suggests the possibility of selection for resistance to snow damage. Some of this variation was undoubtedly due to difference in form of the trees but it is possible that there is also difference in the toughness of the wood. By selecting and vegetatively propagating trees that have good structure and also wood that endures great stress without breaking, it should be possible to develop varieties of the different species that would withstand heavy snow without damage.

TREE CARE PREVENTS SNOW DAMAGE

In resistance to snow breakage the care of a tree is almost as important as its species. In fact by neglect it is possible to predispose trees of any species to snow damage and conversely by proper training and maintenance it is possible to make trees of any species better able to withstand storms.

Training of the tree to have a strong framework that will resist snow damage should start as early as possible, preferably in the nursery. Branches that are to form the main framework should be selected so that they have an even distribution around the trunk and are widely spaced up and down the trunk. Subsequent pruning should aim to preserve this strong framework, to prevent crowding of branches to keep the tree well balanced, and to remove V-shaped crotches that split easily under stress. Although tedious and expensive, the judicious thinning out of small

branches will reduce snow accumulation more effectively than removal of a few large branches. For trees such as Siberian elm this might involve an early fall pruning before leaf-fall in addition to the normal dormant-season pruning.

Trees weakened by over-crowding, disease and insect injury, nutrient deficiencies or drought cannot be expected to withstand storms. But over-vigorous growth caused by excessive fertilization or too much water can be almost as bad as neglect. Over-stimulated trees develop weak crotches, shoots too long for their diameter and wood that is liable to break under strain. Normal growth for the species, sound wood and mechanically strong structure are the conditions desired.

Old trees that have not been trained to have a strong framework can be strengthened against snow damage by proper bracing with cables. This is a job for an expert, as otherwise more harm than good may be done.

PREVENTING DAMAGE BY TREES

We have seen that damage to other property caused by trees during the storm, resulted from breaking or excessive bending of the trees. It follows, therefore, that all means indicated for preventing snow damage to trees are also means of preventing other property losses in such storms.

In addition, there are some special precautions that tree growers can take that will help to reduce property damage in future snowstorms. Most important of such precautions is to avoid planting tall trees where their breakage might damage other property. Telephone and power lines have sustained the greatest damage from this cause and therefore it is to the protection of

these utilities that chief attention should be directed. This is important to the community not only from the standpoint of uninterrupted service but also because the cost of repairing these lines must ultimately be reflected in the rates the companies charge for their service.

In the older parts of the city, already fully planted to trees, not much can be done to remedy the situation except to remove those trees most likely to cause destruction and to correct, by cabling or bolting, those having weak structure. In unplanted areas much may be done to avoid such losses by proper planning. Most effective would be restriction of plantings under telephone and power lines to low-growing species. It is necessary to consider not only the main lines but also the loops from the main lines to the houses. Both the telephone and power companies serving Denver report greater expenditures on repairing these loops after the storm than on the main lines.

It should be emphasized that this article is only a report on damage to and by trees and on means of preventing it and not general recommendations for tree growing in Denver. Many factors other than snow damage are of course important in the selection, maintenance and use of trees in a city. However, because of our great losses through tree damage caused by snows, such damage must be of concern to us in all matters pertaining to tree growing in this area.

Acknowledgement:

Thanks are due Mr. Edmund W. Wallace for assistance in locating various tree species in the city and in taking pictures of snow-damaged trees.

DON'T FORGET —

COLORADO GARDEN SHOW, APRIL 7-10

CHRIS G. MORITZ - LANDSCAPE ARCHITECT
DENVER, COLO. MARCH 1960

A vertical scale bar with markings from 0 to 100 feet. The markings are at intervals of 10 feet, with '0' at the bottom and '100' at the top. The text '100 FEET' is written vertically along the right side of the scale.

Colorado Garden Show

DENVER STOCKYARDS STADIUM

APRIL 7-10, 1960

**Hours: Thursday, 12-10; Friday and Saturday, 10-10;
Sunday, 10-6**

THE DESIGN AND ITS DESIGNER

With the tremendous increase in gardening interest we find that Garden Shows are being spotlighted throughout the world. The International Floriade just opened in Rotterdam and will remain open until November with an expected attendance of 6,000,000 people. In the United States we have shows in New York, Philadelphia, Cleveland, Oakland and, for the first time, a full-fledged Garden Show here in Denver.

Such shows don't just happen, they take a great deal of vision and planning. They are primarily an educational venture aimed at showing the public new and exciting garden ideas. To accomplish this purpose, plants, building materials, and garden accessories have to be integrated into a plan that is functional and has mass appeal. Thus, it is easy to see that the success of such a show hinges on its designer. Our Colorado Garden Show is fortunate in having a top-notch Landscape Architect who has given us an exceptionally fine plan. Since Chris Moritz is relatively new to our area, we would like to give you a brief biography on him.

Chris was born in Germany and became interested in horticulture at an early age. He attributes much of this interest to Mr. Foerster, owner of the Foerster Perennial Gardens in Germany. Mr. Foerster is a leading perennial hybridizer known throughout the world for his many introductions. Chris served a two-year apprenticeship under this noted gentleman, and the knowledge of plants learned from him stimulated Chris to further his education in landscape architecture. He studied at Hannover, Germany, Iowa State, Colorado State University and received his degree in Berlin, Germany. Since he arrived in this country, Chris has worked for S. R. DeBoer and Ernest Sheffler, local architects, and during the past year has been Landscape Architect for Magic Mountain, Inc. Last summer he submitted a tentative plan for the Garden Show. This was accepted by the Show Committee, which then asked him to draw up the detailed plan. Garden Shows are not new to Chris. He worked on two major shows in Germany, one in Cologne with an attendance of 5,000,000 and one in Dortmund with 7,000,000 attendance. We feel that he has done a splendid job on the Colorado Show. I'm sure you will agree when you see the Show. On completion of the Show, Mr. Moritz will be employed as Landscape Architect for Lew Hammer, Landscape Contractor.

GROWING FRUIT ON DWARF TREES

BY CARL JORGENSEN

Pomeologist Colorado State University



A dwarf fruit tree generally is assumed to be a well-known standard variety grafted on a slower growing rootstock. This restricts the normal vigorous growth of the desired variety and produces a tree of smaller size. The resulting tree usually produces fruit much sooner than a standard tree. The fruit is full-sized and of the same quality as that produced on a standard tree.

This early bearing habit is a distinct advantage to home orchard enthusiasts. Also several dwarf trees can be planted in the same space taken up by a single standard tree. This permits 4 to 6 varieties to be grown. (Of course the same end result can be obtained with a 4 in 1 or 5 in 1 standard tree, where the nurseryman has grafted 4 or 5 varieties on one standard tree.) Another distinct advantage of dwarf trees is the lower over-all height. This means that the trees are more bush-like, making them easy to prune, thin, spray and harvest. Less damage to fallen fruit results. Since most homeowners do not have high pressure spray equipment necessary to reach the tops of standard trees, the resulting fruit is often wormy or diseased. Even low pressure hose-attached sprayers can do an effective job spraying dwarf fruit trees. Pruning and harvesting is a pleasure. Most operations can be done from the ground or from low ladders.

Dwarf fruit trees do have some drawbacks. They are generally shallow rooted thus subject to drought, winter injury and uprooting by heavy winds. They need support while young in order to develop a straight upright shape. As a group they are shorter lived and less hardy than standard trees. This is probably not of too much importance in backyard orchards. Not all varieties are equally compatible with dwarfing stocks. There are natural differences even on standard trees as to size, shape and vigor. These differences are exaggerated on dwarf stocks. The stronger growing variety will be taller on the same dwarf stock than a variety with less vigor. Also, if planted so deep as to bury the graft union, the vigorous standard variety will scion-root and a large tree will result.

Dwarfing of fruit trees is not new. During the 1600's and 1700's, a heterogeneous collection of apple and pear dwarfing rootstocks developed in Europe. These were commonly called "Paradise" or "Doucin" stocks. Sweet cherries grafted on smaller sour cherry stocks had a dwarfing effect. Here in the United States many dwarfs were planted in New York and other eastern states in the

early 1900's. Some semblance of order is finally emerging from the many collections of dwarfing rootstocks. The collections tested in England and at the Fruit Experiment Station at East Malling is probably the most famous. Table 1 shows their origin and usefulness. You will note that EM II, EM VII, EM VIII, EM IX, and EM XIII are the only ones recommended for use in the United States.

Table 1.—Suggested International Identification of East Malling Apple Rootstocks, Their Growth Effects on Varieties in The United States, And Their Former Names.

Malus Rootstock Type	Growth Effect	Former Names
EM I	Vigorous	True Board-leaved English Paradise
EM II*	Semi-dwarfing†	True Doucin; also called English Doucin or "English Paradise"
EM III	Semi-dwarfing	Dutch Doucin or "Hollyleaf Paradise"
EM IV	Semi-dwarfing	Holstein Doucin; also called <i>Malus pumila</i> and "Dutch Doucin"
EM V	Semi-dwarfing	Doucin ameliore; also called Improved Doucin and "Red Paradise"
EM VI	Vigorous	Nonsuch Paradise
EM VII*	Semi-dwarfing	Without name
EM VIII*	Very dwarfing	French Paradise; also called "Red Paradise" and "Clark Dwarf" in the U. S.
EM IX*	Dwarfing	Yellow Paradise of Metz, Jaune de Metz, Dieudonne
EM X	Very vigorous	Without name, selection Doucin U1 by Spath
EM XI	Very vigorous	Green Doucin, Prachts Doucin
EM XII	Very vigorous	Without name, of English origin
EM XIII*	Vigorous	Black Doucin
EM XIV	Not tested	Without name, selection Doucin U5 by Spath
EM XV	Very vigorous	Without name, selection Doucin U6 by Spath
EM XVI	Very vigorous	Ketziner Ideal
EM XVII	Semi-dwarfing	Without name, a selection by Sprenger (similar to EM V)

*Recommended for use in the United States.

†Among the semi-dwarfing stocks, EM VII is typically semi-dwarfing, whereas all others tend to be more vigorous, although not as much as EM I.

More recently a Malling-Merton series has been developed for apple. East Malling stocks were crossed with Northern Spy some 30 years ago and 15 seedlings selected for resistance to wooly aphis (a root infesting insect) as well as for their dwarfing effect. Of these MM 104, 106, 109, and 111 have been introduced into the United States. The smallest trees are those on MM 106, about the same as EM VII. MM 104 is a little larger and MM 109 and 111 produce trees similar to those on EM II. They produce vigorous, well-anchored trees, produce early and are heavy yielding.

The Manchurian crab (*Malus baccata* var. *mandshurica*) is a seedling rootstock which is hardy and has a semi-dwarfing effect. The resultant trees are about the size of those grafted on EM VII.

Most midwest nurseries produce dwarf apples by the Clark system. In this system a seedling root is grafted to a hardy trunk variety such as Virginia



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Crab, then a short piece of interstock called "Clark Dwarf" is grafted to the crab trunk and finally the fruit-bearing variety.

Yields obtained from dwarf apple trees vary considerably. Approximately 3 bushels per tree can be expected on the most dwarfing stocks such as EM IX, with at least double this yield for EM VII and II.

In order to develop dwarf pear trees, quince is used as the understock since no dwarfing pear stocks have been found to date. Angiers quince EM type A is the recommended one. In order to lessen the ravages of fire blight, resistant interstock called "Old Home" is often used on the dwarfing quince stock and becomes the framework for the desirable variety.

Sour cherry is a small tree when grafted on Mahaleb (*Prunus mahaleb*). This is the usual understock for commercial Montmorency trees in this region. However, sweet cherry varieties may also be dwarfed by using the same Mahaleb seedling rootstock. Since peach trees are normally small trees when grafted on regular peach seedlings, they are not usually grown as dwarfs. If extremely small trees are desired, Nanking cherry (*P. tomentosa*) or western sand cherry (*P. besseyi*) may be used. The latter is very susceptible to iron chlorosis, however. These two might also become dwarfing stocks for cherry and plum.

One word when buying dwarf trees. Nurserymen generally do not specifically list the rootstock used. This is unfortunate since the buyer doesn't know whether the desired variety has been grafted on a very dwarf stock or on a semi-dwarf stock. Specify the kind you want by number. The rootstock as well as the bearing variety should be labelled.

Dwarf fruit trees lend themselves well to being trained as "espaliered" trees. These are trained to grow against a wall in a vertical plane rather than the usual round shaped head. They can become a very attractive addition to the foundation planting—especially against a rather large unbroken stretch of wall. If planted against an east or south wall, such espaliered trees will grow and bloom under otherwise adverse climatic conditions.

Since some failures have been reported for dwarf trees because of winter dessication and lack of rootstock hardiness, they cannot be universally recommended for our Rocky Mountain region. They are certainly worthy of trial. For the amateur horticulturist with a flair for growing the unusual, they are definitely worth the effort expended on them. A little extra winter protection for the roots in the form of a straw mulch or other mulch material may make these dwarf fruit trees the envy of your horticulturist friends.

FRENCH HYBRID LILACS ON THEIR OWN ROOTS

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FERTILIZING LAWNS

BY CHAS. M. DRAGE
Extension Horticulturist

A good fertilizer program for lawns would be to use straight nitrogen fertilizers or complete fertilizers that are high in nitrogen. Use them at the rate that will supply 3 or 4 pounds of available nitrogen per 1,000 square feet. The 3 or 4 pounds of available nitrogen should be applied in 2 or 3 applications. The amount and time of application is an important factor in preventing overstimulation. When 3 feedings are made the first should be about April 1, the second six weeks later, and the third the last week of August. When 2 feedings are made omit the middle feeding.

Before new lawns are established, liberal amounts of organic matter, not less than 2 yards per 1,000 square feet, should be worked into the soil. This should be supplemented with 15 to 20 pounds of phosphate and on sandy soils add 15 to 25 pounds of potash. Or 200 pounds of a complete analysis fertilizer high in phosphate could be used.

In recent years numerous lawns in Colorado have been infested with leaf spot organisms. Leaf spot is not serious in itself, but can lead to foot rot infections. Foot rot infections have been serious. Several Colorado authorities have reported "that it seemed foot rot was more serious on lawns where high amounts of nitrogen were being used."

Raymond J. Lukens and Ernest M. Stoddard in Connecticut Experiment Station; Circular 208, 1959, write as follows: "Applications of fertilizer high in nitrogen increase the severity of leaf spot. In fact, applying fertilizer to grass having leaf spot may lead to foot rot which may kill the infected plants. Close mowing encourages foot rot. When weather favors disease development, cutting the grass high (1½ inch) and keeping nitrogen levels low may result in the leaf spot stage.

When such weather conditions do not persist, infection will stop at this stage. However, if grass is cut short and has plenty of fertilizer, the disease may progress to the foot rot stage. If the lawn has previously had bluegrass leaf spot, postponing fertilization until the weather clears and the sod drains will reduce the severity of the disease."

John C. Harper II and M. A. Hein in U.S.D.A. Home and Garden Bulletin No. 51, 1959, have this to say about leaf spot, "Leaf spot, a disease that causes reddish-brown to purple black spots on the leaves of Kentucky bluegrass and sometimes spreads to the crown causes considerable damage."

"Damage can be reduced by: (1) Mowing no shorter than 1¾ to 2 inches; (2) using adequate fertilizer but avoiding overstimulation with nitrogen; (3) using Merion Kentucky bluegrass wherever possible (it is less susceptible to leaf spot than common Kentucky bluegrass); (4) using mixed planting of several grasses."

Fungicides can be effective in controlling leaf spot. However, the nature of the disease makes it necessary to make repeated applications, starting with the first symptoms of the disease. The fungus persists through the winter on infected refuse. Spores from infected leaves are the principal source of inoculum in the spring. Germinating spores can produce visible lesions within 4 days of inoculation. Successive generations of spores are formed every 1 to 2 weeks during the growing season with infection occurring during cool, wet weather.

GARDENING WITH COLORADO WILDINGS

BY RUTH ASHTON NELSON

A Love of Flowers Leads to Her Life Work

ABOUT THE AUTHOR

A little girl, Ruth Ashton, born in Boston and who lived for some time on the island of Martha Vineyard, came with her parents to Colorado to spend a summer vacation. The lure of the mountains brought the family back again for further visits. They spent their time mostly in the region near Estes Park.

On one occasion the family took a trip by horseback and burro from Glen Isle to Hot Sulphur Springs. The smaller children rode the mountain burros but Ruth, being the eldest, had a horse. This trip stands out in her memory as enjoyable, but the thing that impressed her most was the sight of the masses of fringed gentians which were in bloom at that time. She thinks it was then that a botanist was born and her life began to follow a pattern.

She lived in the East until her schooling was completed, attending "The Sea Pines School for Girls" on Cape Cod. Upon completion, she entered Mt. Holyoke College where she majored in botany and writing in preparation for future work in her chosen field.

In 1924, she returned to Colorado to take a position for the summer as a counsellor at a girls' camp. She taught nature study and horseback riding.

The following summer she began working for the government at Rocky Mountain National Park and continued there for several years. Meanwhile, she was working toward a Master's degree in Botany at Colorado Agriculture and Mechanical College (now Colorado State University).

She completed this work in 1930. Her previous work in the park led to her thesis. Then she began to put her findings into book form. The book, "Plants of Rocky Mountain National Park" was published by the National Park Service in 1933. It was revised in 1953 and is used extensively as a reference.

Miss Ashton bought a home in the mountains, a former homestead, about seven miles northeast of Estes Park which she still owns.

In 1931, she married Dr. Aven Nelson, an eminent botanist, who was professor of botany at Wyoming University and was considered a leading authority on the plant life of the region. For twenty years she aided him in his work of identifying and classifying the flora of the Rocky Mountain area.

Since her husband's death, Mrs. Nelson has made her home in Colorado Springs, but spends much of her time in the summer at her mountain home, between Big Thompson Canyon and Devil's Gulch. The house is situated among many huge ponderosa pines and native wild flowers.

For the last ten years Mrs. Nelson has given a great deal of her time to photographing wild flowers and has a wonderful collection of color slides which she uses to illustrate her lectures. She teaches classes at a vocational school as well as small private classes. Her home is equipped with cabinets in which she has specimens and information right at hand.

Mrs. Nelson brings many plants down from the mountains to her yard and takes special pleasure in growing the unusual.

Recently she has collaborated with Rhoda N. Roberts in preparing a book entitled "Wild Flowers of Colorado" for the Denver Museum of Natural History.

Ruth Ashton Nelson's ambition to learn about flowers and to share this learning with others has been fulfilled.

Mrs. Nelson plans to do a series of stories entitled *Gardening with Colorado Wildings* for the *Green Thumb*. The following is the first of this series.—By Lou T. Ault.

GROUND COVERS

A PLANT which often attracts attention in my garden as a ground cover is *Antennaria rosea*, the "pussy toes" of our mountain meadows. This forms a carpet of small, neat, silvery leaves the year around. It thrives between flagstones and around rocks and may be used on banks if they are not

exceptionally dry. It will do well in full sun or partial shade. Other native species of *Antennaria*, especially *A. parvifolia*, the small-leaved catspaw, which is common on dry hillsides of the ponderosa pine zone, are also very useful. Their leaves are slightly larger than those of *A. rosea* and the rosettes somewhat looser so that they

carpet they make is not quite so fine textured and compact, but even so it is very satisfactory and attractive.

These plants spread rapidly when once established. For best results they should be collected in early April, before the flower buds appear. To keep the *Antennarias* neat looking through the early summer the flower stalks should be cut off when two or three inches tall. I use grass shears. Staminate plants are preferable for garden use because their heads wither without making a lot of fluffy seeds, but it is impossible to determine this when collecting in the spring. One could mark a patch of staminate plants at blooming time and move them the next spring, but I depend on eliminating the pistillate ones after I get them established, providing of course that I also have some staminate plants.

In spite of general belief to the contrary, Kinnikinnic is an evergreen ground cover which can be successfully transplanted and grown, as several of our Colorado gardeners have demonstrated. It requires careful handling in the transplanting and at least partial shade both summer and winter. Best results are obtained by collecting it when the ground is moist. If that is not practical carry a bucket of water and soak the soil around the plant before digging it. This will be helpful even if the soil falls off, as it is quite apt to do, when you dig it. On no account should the roots be allowed to dry out.

Vigorous colonies of Kinnikinnic are usually found in shaded places which retain winter snow. These will be found to have long branches which have rooted. Carefully cut the stem back of the rooted area without disturbing the roots. Then dig and wrap immediately in wet newspaper or sphagnum. It may be advisable to cut off the tip when



Antennaria rosea, pussy toes, between flagstones at Mrs. Nelson's residence in Colorado Springs.

planting but several leaves should be left on the new plant. Creeping Mahonia, *Berberis repens*, may be handled in the same way and is somewhat easier to establish than is Kinnikinnic.

A mixture of moist sand and peat moss induces root growth and should be used liberally whenever and wherever these wildings are transplanted. Keep the plantings moist for two or three weeks, or until new growth appears. Shading at first helps. My experience is that I have better success in moving all of these plants early in the season, particularly in late March and early April.

All of the plants which I have mentioned are still in plentiful supply along the foothills of the Front Range but anyone wanting to collect them should be careful and considerate in doing so. Remember the following points in order that those who come after may also enjoy. Do not collect near public roads and trails; always ask permission of property owners; always leave more than you take; never waste, take only small amounts and propagate them in your own gardens.

Tapestries and Gardens

BY JULIA H. ANDREWS

Rocky Mountain Chapter of A. S. L. A.

A TAPESTRY consists of many small scenes woven together to depict a landscape. Each scene is made up of tiny objects and details. Only when the tapestry is closely examined with a magnifying glass do you see these minute details. When you step back 20 paces you are only conscious of the tapestry as a complete unit. The small scenes, the tiny objects and the minute details are all important to tell the story, even though they are not readily discernable to you at 20 steps away.

Now that we are aware of the details existing in the tapestry landscape, let's extend our examination to the "living" landscape. Before you can relate the elements of design to your own garden, you must first understand the coordination of details existing in the natural landscape.

If we were to drive on the Denver-Boulder Turnpike to the high point overlooking the Boulder Creek Valley and stop beside the road we would see a "landscape". It is magnificent! There are blue mountains, grey rock cliffs, red roofs and green fields. Look closer for some of the small objects—the wire strung on heavy posts, 26 Shetland ponies, a cottonwood seedling at the edge of a marsh, a Ford station wagon beside a headgate. If we walk into this "landscape" it is like using a magnifying glass to see the minute details—the silver colored staples holding the barbed wire to the pitch pine posts, the white stars on the ponies' foreheads, the shovel in the rear of the station wagon and the yucca plants in the fields.

How does talk about a wild landscape, little altered by man, have anything to do with my garden, you ask. I hope that the description will help you realize that in your own garden you are looking at a landscape through

a magnifying glass. You are looking at the minute details and are so concerned with these details that you forget to step back. When you do, do you see a tapestry? Do not be discouraged if all that you see is a collection of details. You now have a new purpose in your garden planning.

The walk is one of the elements of your landscape design. Does it just take you to the incinerator or does it help frame and delineate the design?

The shape of the planting bed is another element. Have you tried the tricks you can play on the eye by placing the bed so that you look down its length rather than across its width?

The vertical elements can be your fence or wall or hedge.

You like curves? Have the planting bed follow the same curve as the fence.

Now the shape or pattern has become the important factor. The fence tells you about it once. The front edge of the planting bed tells you about it again and the outline of the mass of foliage and color tells you about it a third time. You are achieving design when you learn how to make each of the elements in your garden work together to make a "landscape."

Let's build a patio together for another example of using the elements to make a design that is a unit as the tapestry is a unit. At the concrete block manufacturer's we can buy 24 inch reinforced concrete pavers. Each one is an element of design. Lay them in sand with their edges touching where you want your patio. Now let's move chairs onto it and enjoy ourselves. It's too small, you say. So you add more pavers until at last it is large enough to use when entertaining a few friends. In the summer you discover that it's too hot to use. We can remedy that by

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planting a tree within the patio area. This will require the space of 3 or 4 of the pavers. Be careful to place the tree so that it shades the patio at the time of day that you want shade. Now something must be done about the patch of dirt at the base of the tree. We solve this problem with evergreen ground covers and spring bulbs. It is very nice next spring and your neighbors compliment you on your patio with its shade and tulips and green foliage. Summer comes and you feel that the patio is drab after its spring loveliness. So up come some more

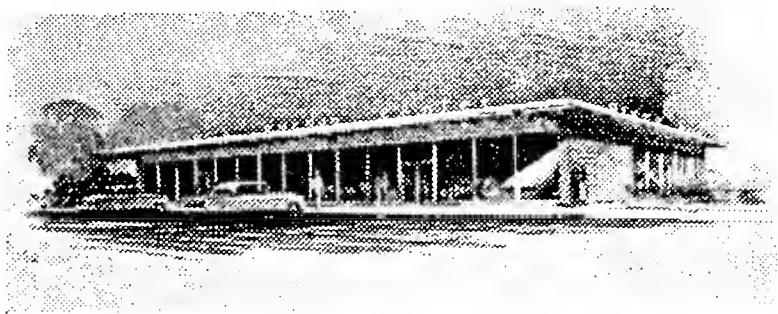
pavers to make room for 50 red and white petunia plants.

Now you sit and reflect that a successful patio is not just paving as you believed when you started. It is paving together with sun and shade and green plants and trees and swatches of color and furniture. Each of these individually is an element of your landscape design. Each paver is not important for itself but in how it helps the other elements to be important. Now, when you stand back without the magnifying glass, there is pattern or design in your garden.

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THE PRUNING of ROSES

BY CLYDE E. LEARNED



AT the close of the rose growing season in late October it is a good idea to trim the larger rose bushes to a 30 to 36 inch height and tie the tops of the canes together loosely with string, to prevent cane breakage by high winds or heavy snows.

The early disastrous snow storm of Sept. 28, 1959, is a good illustration of what can happen. At the time of this storm the bushes were in full leaf and the heavy wet snow broke many of the canes back to the ground.

Following a normal Colorado winter, nature has usually made the decision as to the amount of spring pruning that will be required on the Hybrid Tea, Grandiflora and Floribunda roses. It is my usual practice during the first part of April to give the bushes a rough preliminary pruning, at which time the canes are cut back to a height of from 12 to 24 inches.

The uncovering and giving of the rose bushes their final pruning in Colorado, with its changeable spring weather is a rather risky operation, as most of you realize, and I am often reluctant to recommend any fixed date upon which these pruning operations can be successfully performed.

However, my records for the past ten years do indicate that this uncovering and final pruning operation has been performed between May 5th and 10th. Before uncovering I scan the news reports or call up the Weather Bureau, and if the forecast for a week ahead is favorable I then uncover and prune. It stands to reason the greater the amount of cover material, the more protection for the rose bush and less dead wood to cut out in the spring.

In performing the final pruning, first carefully remove the winter protective cover so you can see what you are doing. This operation requires extreme care to avoid damaging the new early growth. Some people have good results using a gentle hose spray to wash the soil away from the canes. The pruning work actually includes two distinct operations, first, thinning out, which means completely removing all dead, diseased or injured wood, thereby stimulating new growth and flower production. Secondly, shortening of the remaining canes or shoots so that the flowers produced may be larger or better.

The canes should be cut back to sound wood, which is normally green in color, with a clean slanting cut about a quarter inch above a good eye or bud, cutting in the same direction as the bud. Sometimes a late winter freeze may leave the cane still green and kill the interior of the cane with the result that the bud starts out normally but later dies back due to the increased demand of the growing plant.

No matter how good a pruning job you do on the dormant roses you will probably have to do some supplementary cutting as the season advances to balance the bush and remove some canes that did not grow as originally contemplated.

Keep the bush as symmetrical and shapely as possible by uniform cutting on each side and remove all twiggy and spindling canes as well as candelabra growth. Usually when you get through you will have, or hope you will have, from three to six good canes which will range from six to eighteen inches in height.

The question of pruning heights has long been a bone of contention among rose growers. However, it should be kept in mind that good green canes store reserve food which will nourish new growth and help in producing earlier blooms for June Rose Shows.

The low pruning of the bush to two or three eyes above the ground may give you a few extra large flowers for exhibition purposes, but this low pruning will delay the first blooms and will result in fewer blooms during the season.

The cutting of roses for the house or for display purposes should actually be considered as a pruning operation. For first year bushes keep the pruning to a minimum and do not cut too much foliage from the bush. To do so may result in weak and undernourished plants. With established bushes it is possible to cut longer stems. Ordinarily the stems of blooms should be cut about a quarter of an inch above a leaf, leaving at least two sets of well

developed leaves between the cut and the junction of the branch and cane.

Floribundas, which are often used for hedges are sometimes cut back severely to make them conform to a pattern and provide a mass display at one level.

Following the pruning operations it is a good precaution to seal all cuts with an asphalt sealing or other suitable compound to prevent cane borers from boring into the canes. Finger nail polish is often used by the ladies effectively as a seal.

Be sure to keep your pruning shears sharp as dull shears cause jagged cuts that encourage disease or the entrance of cane borers.

The pruning of climbers is an entirely different operation, inasmuch as their blooms are normally on old wood which usually lasts from two to three years. My experience has indicated that during the forepart of April all canes older than three years or about one third of the bush together with a tangle of side shoots should be cut out.

SHRUBS CAN BE CRASH BARRIERS

Selected plant materials make a flexible barrier that cushions the crash of a vehicle without injuring the driver, according to the American Association of Nurserymen, following extensive tests by Motor Vehicle Research, Inc., South Lee, New Hampshire.

At specific dangerous locations on highways it has been found that certain shrubs are capable of stopping automobiles safely at speeds of 50 miles per hour without causing any injuries to the occupants and, beyond scratching the finish, little or no damage to the cars used in the tests.

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COMPOSTING

BY IRENE (MRS. JOHN) SCOTT

PROGRAMS can be likened unto the Tree of Life with most garden clubs keying an April project to trees, believing that "Through its tall heights he may never see. He has not lived in vain who plants a tree." One reason we are so tree-conscious is due to our neighbor, Nebraska. She nurtured a seedling, J. Sterling Morton, to fame via Arbor Day, first proclaimed April 10, 1872. And now held on different dates in sundry states, but in Colorado always on the third Friday in April. Arbor Day is "The only American holiday that turns its face to the future—not the past."

Another date with a future is the semi-annual Flower Show School set for April 25-26-27 at Botanic Gardens House. Continuing the tree theme, this event could be called the Tree of Knowledge of good and evil Flower Show Practice, Horticulture and Floral Design. And, like popular trees, this school shares its fruits with all peoples, whether or not members of garden clubs.

And thereon hangs a tale. Legends, like lichens, grow up, over and around IMPORTANT people, places and projects. But, sometimes like Bouncing Betty go beyond the boundaries of fact into fiction. Perhaps, in some such manner was the idea spread that Flower Show Schools, sponsored by the Colorado Federation of Garden Clubs, Inc. were only for Federated Gardeners. Nothing could be much more misleading. Anyone may come, and for the same fee: \$1.25 per lecture; \$2.50 per day, or \$5.00 for both days. (For details contact either Mrs. G. A. Seastone, 3470 So. Marion or Mrs. L. J. Woodman, 3985 S. Penn., both Englewood.)

Following fallacy number one is another: that only prospective judges may register for Flower Show Schools.

Partly true, in that student judges *must* take five courses, and *must* be members of Federated Garden Clubs. They *must* do much more, too, but back to programs.

Promenading through the programs are the summer shows, sooner than you think, with everyone needing to know more about this growing area. Because a well motivated show is a masterpiece. And masterpieces just don't happen. What then, can you as a club do?

You can: (1) send a delegate to the Flower Show School; (2) give him (or him) program time at the following club meeting or meetings; (3) pay toward or for her expenses, especially if outside Denver; (4) plan ahead for a follow-up course (No. 5) coming in the fall ('60); (5) make this an annual project, noted in your yearbook and allowed by your budget. Please send the type of person who remains awake in Church, and neither sits-out museum tours, nor has a doubting Thomas mind. That old adage you take-out-of-it-what-you-put-in-it, applies here, too.

Publicity Chairman, do get your show information to Chambers of Commerce, travel centers, and anywhere that tourists might stop to learn of local attractions.

For a timely project in keeping with our status as a tourist state, how about marking the plants on the sites, of say Will Roger's and Mother Cabrini shrines, and at the entrances of grounds of other public places? Surely there's a garden club near most of them. And even if the clubs don't do the actual identification, they can furnish data and create interest. This summer as you travel around the state query custodians and gardeners alike as to "What plant is that?"

Which brings us right up to "Good Human Relations Week," April 24-30, sponsored by the Dale Carnegie Alumni Assn., its purpose being: "To emphasize the need for good human relations in every community and in all businesses and professions." Oh, Brothers and Sisters, can we use a big dose of this—TOGETHERNESS. And why not? We've everything to gain, and nothing to lose—that we wouldn't be better without. The County and 4-H Agents need us. We need them. The Artists need us. We need them. The Nurseries, county fairs, non-federated garden clubs, but why enumerate? The list is limitless, dating back to doing it to others as you would like to be done unto. So simple? So Supreme! Rainbows of sweet music.

Both National Music Week and National Background Mood Music Month begin May first. We have a state song "There Will Always Be A Garden." Price 25c. Words by Mrs. E. A. Kehn, 616 Yarrow Street, Arvada.

We need a song suitable for any garden club on a national scope. Any takers?

Taking precedence over other occasions, is Mother's Day, promoted in America by Miss Anna Jarvis, and recognized by Congress in 1914. The white carnation, signifying sweetness, purity and endurance was adopted as the floral emblem. The wearing of a red carnation was not included in Miss Jarvis's original plans. (Did you know that Brother's Day was May 22 and Sister's Day, June 5?) Today, carnation corsages are Colorado's choice.

Why not organize a corsage club? There's a federated club, the Mile High Corsage and Arrangers in Denver and another group in Littleton who call themselves the Floral Benders. Six members, and the same number of courses at \$1.50 each, no dues and only one requirement: "That you secure the basic corsage course and study the fifty detailed corsages, simply described for beginners," and you're

ready for a meeting. Write: The National Corsage Club, Glad Reusch, Director, Headquarters, 5925 Fourth Avenue North, St. Petersburg 10, Florida.

This is the Glad Reusch, known to the Federation through her book, in collaboration with Mary Noble. Mrs. Reusch gives these reasons for forming such a floral accessory group: (1) to learn corsage designing; (2) to share in a restful and satisfying hobby; (3) to give pleasure to others; (4) for self-adornment; (5) to spread the hobby, especially to Garden Therapy and Junior Gardening Leaders; (6) for economical reasons; (7) helps solve gift problems; (8) as decorations.

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TREES FROM SURVEYOR'S STAKES

BY EDMUND WALLACE

Denver Parks and Recreation Dept.

You may have wondered what new type of tree the Parks Department was raising if you have seen the little round piles of leaves scattered throughout the parks with surveyor's stakes growing from their centers. By the time you read this most of those stakes will have grown into blue spruce, Austrian pine, linden, oak, and many other varieties of trees. This is a sort of magic formula the Parks Department has worked out for converting stakes into trees.

Early in the fall, before there is any frost in the ground, stakes are driven at various places throughout the parks in a program of starting new trees in older areas to take the place of those that are reaching the end of their life span. Each stake is marked as to the type of tree desired for the location and then a good leaf mulch is added. This keeps the frost out of the ground until mother nature can transform those stakes into real trees. Our nursery crew, I'm sure, has a lot to do with this transformation. You may have seen them digging around under these leaves and then putting them neatly back around the base of a new tree. I had the suspicion that some of these new trees were coming from the nursery where I'd seen the men spreading leaves in the fall to keep the frost off and making for easier digging later on. Having just checked the nursery the other day, my suspicions have been confirmed. It's so full of fox holes a fellow can hardly get around without falling into one of them. Some six hundred trees are missing from the nursery and, judging from all the new trees I've seen as I drive the parks, I think I know where they went.

Look next time you drive through Washington, City, Cheesman, Platt, or most any other park and you'll see in among the yellowing maples or thinning evergreens, their progeny coming along to take their places when they've served their usefulness.

LOOK AND LEARN TOURS

"Designed for Garden Living" is the theme of this year's garden tour. A special committee is now in the process of selecting gardens. Their decision will be based on design, functional patio areas, and easy maintenance. They have a choice of some 40 gardens suggested by the Landscape Architects Association and the Denver Nurserymen. Tentative dates for this year's tours are July 13 and 14.

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MRS. ELIZABETH REYNOLDS TO LECTURE

The Garden Club of Denver has been fortunate in procuring Mrs. Elizabeth Reynolds for a lecture in Denver on Tuesday, May 17. Proceeds from this talk will be donated to the Denver Botanic Gardens. The lecture, open to the public, will be presented at the Bonfils Memorial Theater at 2 p.m. Tickets are \$1.25 each, and may be obtained by contacting Mrs. Arneill, PEarl 3-6004; Mrs. Nydstrom, SUNset 1-1213; or the Colorado Forestry and Horticulture Association office, EAst 2-9656.

Mrs. Reynolds will illustrate her talk, "Flower Arrangements and Judging," with a collection of slides accumulated over a period of years by the Garden Club of America. These slides were used for the first Flower Judging Conference held at the Metropolitan Museum of Art.

Mrs. Reynolds is, at present, chairman of the judging committee of the Garden Club of America. Among her many past achievements is the chairmanship of the International Flower Show. She has also won the Fenwick Medal for the best arrangement at the International Flower Show.

This is obviously a lecture that none of our Garden Club friends will want to miss.

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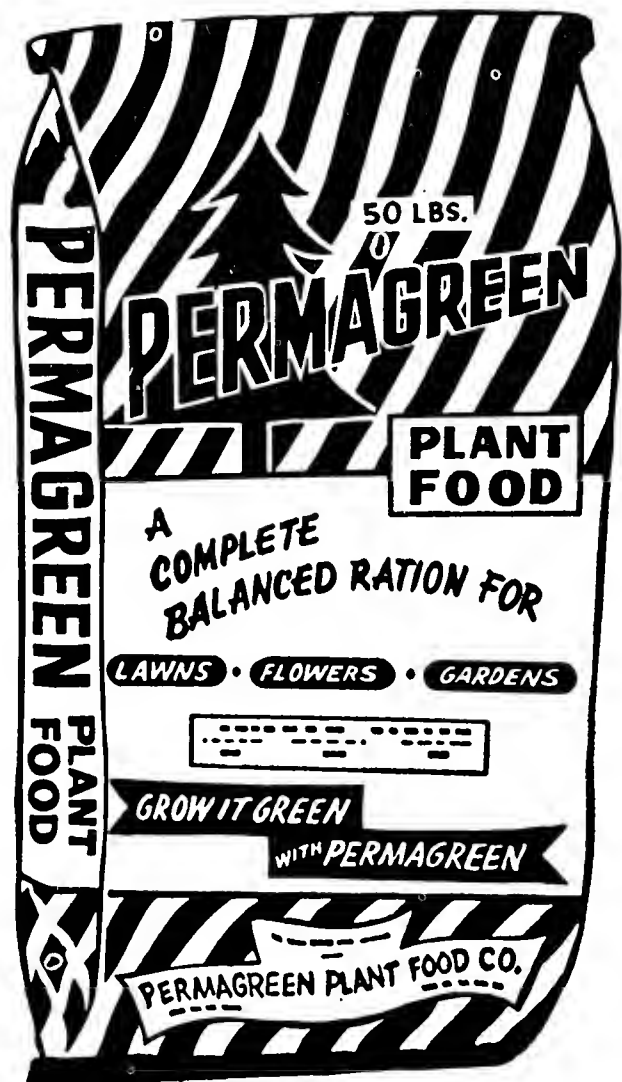
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FERTILIZE LAWN



Seasonal Suggestions

Oh, the lovely fickleness of an April day.

—W. Hamilton Gibson

These words should ring true to the seasoned Rocky Mountain gardener who knows the tricky weather of April. He knows that a week of sunshine can bring forth a beautiful display of narcissus, tulips, and spring flowering shrubs which can be obliterated overnight by snow and zero temperatures.

We can assume that you have all your planning for this season's garden in hand; however, there are last minute changes to be considered such as replacement of plants that were winter-killed. Try to make sure that any change fits in with your overall plan. Some consideration should be given to the actual buying of your nursery stock. You will find that your local nurseries and garden shops have a good supply of quality bare-root nursery stock available. Patronize these people who know plants and how to handle them instead of taking chances with inferior stock sold through mail order catalogues and grocery stores.

Lawns can be planted anytime this month. Again, the incorporation of organic matter is the most important step in lawn building. Next in importance is good seed. Use either Kentucky Blue grass or Merion Kentucky Blue, don't settle for some of the cheaper mixes. Speaking of lawns, a good commercial fertilizer can be applied after the 15th. See article on page 95. If the weather warms sufficiently, 70-80°, 2,4-D can be applied for dandelions and other broad leaf weed control.

It's also time to tidy up the garden. Remove the dead tops from perennials and rake some of the heavy thatch out of the lawn. Use these materials in your compost pile. If it's warm enough, repair and paint your patio, lawn furniture and fences. Flagstones and patio pavers heaved by the frost can be leveled. Stored bulbs can be checked and made ready for planting in May.

Toward the end of the month there should be good displays of tulips in the Garden at Botanical Gardens House and at the Pinetum in City Park.

Our last but most important suggestion is that you make it a point to go to the Garden Show April 7-10 at the Stockyards Stadium. There you will find ever so many good ideas on good gardening and landscaping.

—Pat

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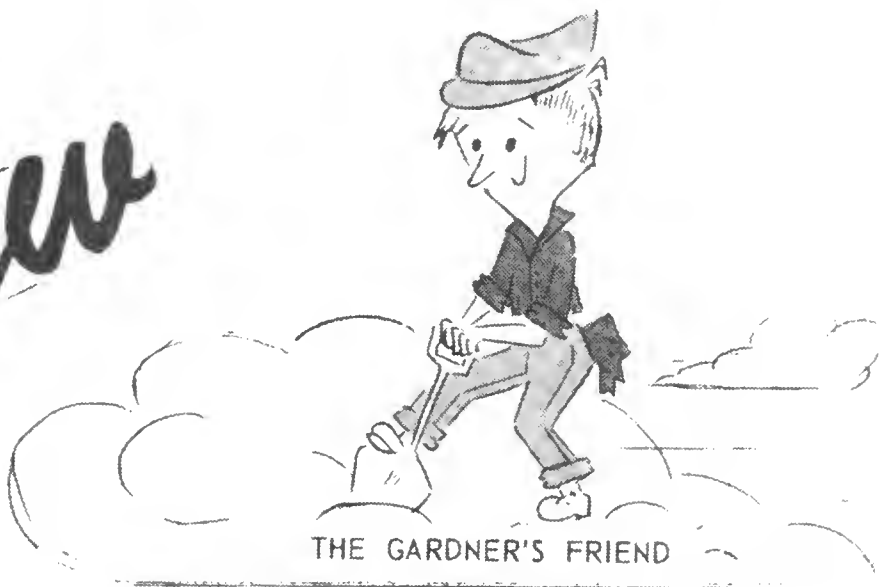
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The Green Thumb

Magazine for Rocky Mountain Gardeners



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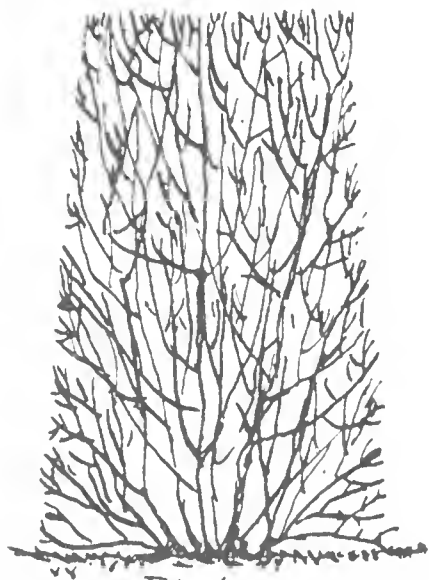
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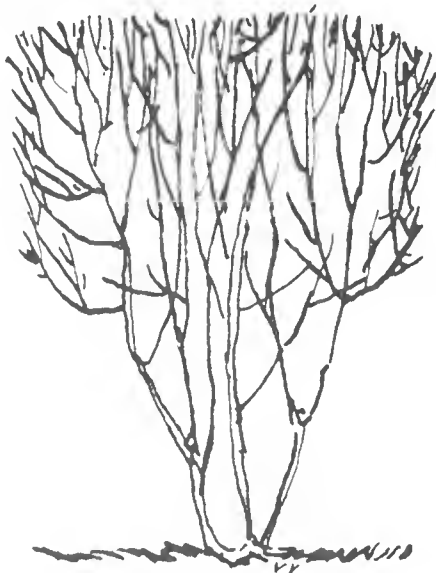
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MAY
Vol. 17
No. 4

The Green Thumb

Colorado Forestry and Horticulture Association

Organized in 1884

"To preserve the natural beauty of Colorado; to protect the forests; to encourage proper maintenance and additional planting of trees, shrubs and gardens; to make available correct information regarding forestry, horticultural practices and plants best suited to the climate; and to coordinate the knowledge and experience of foresters, horticulturists and gardeners for their mutual benefit."

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The Colorado Forestry and Horticulture Association

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909 YORK ST.

DENVER 6, COLORADO

Calendar of Events

The Green Thumb Program — Every Saturday morning on KLZ at 10:15 a.m.

“Fun with Flowers — A lecture and demonstration is followed by the making of arrangements. Each person brings containers, mechanics, and material. The workshops are open to everyone. They will be held each month at the following times and places:

Workshop I—Botanic Gardens House, 909 York Street, 9:30 a.m., the third Wednesday of each month.

Workshop II—Lakeside Denver Dry Goods, 44th and Harlan, 10 a.m., the first Friday of each month.

Workshop III—Arapahoe County Fair Grounds, Littleton, 9:30 a.m., the third Tuesday of each month.

Floral Art Courses — Opportunity School. Every Thursday, 9 a.m.-11:30 a.m., 1 p.m.-3:30 p.m., 6:30 p.m.-9:15 p.m. There is no charge except for materials.

BOTANIC GARDENS HOUSE MEETINGS

909 York Street

May 4—Botany Club, 7:30 p.m.

May 5—Hillcrest Garden Forum, 11 a.m.

May 5 — Junior League Provisional Course, 2 p.m.

May 5—Orchid Society, 7:45 p.m.

May 6—Civic Garden Club, 1:30 p.m.

May 9—Judges Council, 10 a.m.

May 10—Carnation Garden Club, noon.

May 10 — Evergreen Garden Club, 7:30 p.m.

May 11—Organic Gardeners, 8 p.m.

May 12 — Crestmore Garden Club, 9:30 a.m.

May 12—Rose Society, 7:30 p.m.

May 13—Colorado Forestry and Horticulture Association Finance Committee, 10:30 a.m.

May 13—Colorado Forestry and Horticulture Association Board Luncheon, 11:30 a.m.

May 16—Botanic Gardens Board, p.m.

May 18—Fun with Flowers Workshop, 9:30 a.m.

May 18—Wheatridge Women's Garden Club, 11 a.m.

May 19—Scouts, tour of the garden, 3:45 p.m.

May 27—Civic Garden Club, 1 p.m.

June 1—Botany Club, 7:30 p.m.

June 3—Civic Garden Club, 11 a.m.

FLOWER SHOWS

May 25—Civic Garden Club, Botanic Gardens House, 909 York Street, Denver, from 2 to 8 p.m.

May 31—The Morning Glories Garden Club, St. Paul's Episcopal Church, 10th and Garrison Street, Lakewood, from 2 to 5 p.m.

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Annual Plant Auction

MAY 7 and 8

Spring has sprung and the grass is riz, there's no doubt about where the flowers is, they're at the Plant Auction. Annuals, perennials, trees, shrubs and evergreens, they'll all be there, thanks to the generosity of our local nurserymen and seedsmen. Here you have a chance to bid your way to a fully landscaped yard or you can pick up choice plants for fillers and have a lot of fun doing it. This year's event doesn't end with plants, there's much more. There will be all kinds of antiques for sale, along with quantities of salable white elephants. Mrs. Barbour and Mrs. Catherwood along with many helpers have been busy sorting and pricing these items for weeks. Our basement looks like a fine old antique shoppe, but we will be in business just two days, so make the best of this opportunity. If you're in the market for antiques, there will be bargains galore.



Need some books to fill up those empty shelf spaces? We have boxes and boxes of fine books that will be offered in a pot-luck sale for fantastic prices.

Don't worry about lunch. Mrs. Conrad is fixing up an a la carte luncheon that will give you the energy you need to keep up with the bidding.

There are other things we skipped, but come, see and enjoy this event May 7 and 8.

All the booths will be open from 10 a.m. to 5 p.m. each day and the Auction will be held each afternoon from 1:30 to 4:30.

THE PRAYER OF THE TREES

You who pass by and would raise a hand against us, heed well our prayer before you harm us.

We are the fuel for your fires on cold nights, the friendly shade protecting you from the fierce sun and our fruits are refreshments to quench your thirst and cheer you as you journey on.

We are the rafters of your roof, the bodies of your boats, the seats of your stools and the boards of your beds.

We are the handles of your hoes, the gates of your homes, the wood of your cradles and the shells of your coffins.

We are the saviors of your soil from loss by rain and wind and to your soil we give richness and life for the benefit of all men.

We are the bread of kindness and the flower of beauty.

You who pass by, listen to our prayer and harm us not.

From "The Perpetual Forest" by W. B. Collins
Author unknown; believed to be of
Portuguese origin.

Trees

That Bloom

In the Spring

KATHARINE B. CRISP

Home Garden Club

Large trees serve many useful purposes but when they bear fragrant and beautiful flowers they are even more valuable. Can one think of anything more impressive than a large tree covered with bloom. For example:

The Russian olive produces many fragrant flowers in June, yellow and silvery against a gray background.

The linden blooms in June or July. The flowers open by the hundreds, creamy white and honey laden, very attractive to us as well as the bees. The appeal of the fragrance is sufficient to lead us to the tree. It is from underneath that the full beauty of the linden must now be seen.

The horse chestnut flowers are large, showy, in panicles. In bloom the horse chestnut is "a pyramid of green supporting a thousand pyramids of white". Each blossom of the dense cluster has in its throat dashes of red or yellow, and the curving, yellow stamens project from the ruffled border of the corolla.

In May while the opening leaves of the wild black cherry are still red the flowers come out, in dainty erect racemes that bloom from the bottom toward the top. I still recall the beautiful tree that once grew on the Capitol grounds.



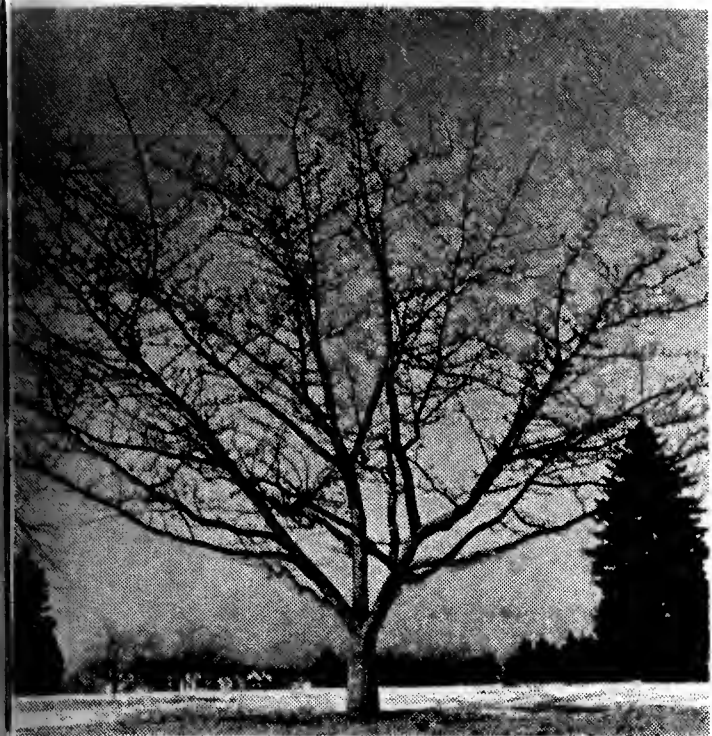
Hopa Crab.

The catalpa has perhaps the largest flowers, very showy, bursting forth in June or July. They are large, white, irregular, the frilled corolla marked with two yellow stripes and numerous purplish dots in loose panicles, six to ten inches long. When in bloom the tree looks like a huge formal bouquet.

However, the trees that many people think of as flowering trees are smaller trees. They have conspicuous flowers in the spring and often colorful fruit in the fall. In winter when the leaves have fallen the branch formation of many of these trees is picturesque. These smaller trees are well adapted to the landscaping of small properties.

Two groups of flowering trees, the cherries and the crabapples stand far above all others in daintiness and grace. The flowering crabapples that grow best in our area are related to the red vein crabapple of Siberia.

The profusely white flowered Dolgo Crab, *Malus Cl. 'Dolgo'*, 20 feet, is a handsome tree of Russian origin coloring early in August. The beautifully shaped miniature apples, one and one-fourth inches in diameter, change during the ripening process from yellow (red-cheeked) to glowing scarlet. They are of good flavor.



Downy Hawthorn.

and may be eaten directly from the tree or made into jelly.

The pink flowered Hopa Crab, *Malus adstringens* Cl. 'Hopa', 15 feet, is a desirable tree. It is beautiful in bloom, in foliage, and in fruit. In April the tree is covered with fragrant light rose-pink flowers. In the spring the foliage is a rich maroon. From mid-summer till severe frosting, the clusters of small reddish crabapples hang on the branches. This fruit makes good jelly. A beautiful Hopa crab with a trunk eight inches in diameter is growing on the southeast corner of the grounds of St. John's Cathedral. Smaller trees may be seen along the Beer Boulevard Parkway near the Downing Street bridge.

The Bechtel flowering crab, *Malus ionensis* B.S.P., 25 feet, is a popular tree. An improved strain called Klehm's is now on the market which grows slightly later and has larger leaves. In the spring, the tree is covered with large double pink flowers that burst beautifully from the buds. There is no fruit. The flowers as they fade remain on the tree producing a somewhat drab appearance. This may be disappointing after the beautiful display that has preceded. But it still is a lovely tree.

The flowering crabapples have a re-



Horse Chestnut

stricted growth or dwarf habit so they will never become large or clumsy. For better acquaintance with other varieties of crabapples an excellent opportunity presents itself in the fine collection of crabapple trees planted in the botanic garden area in City Park. Here more than thirty-five varieties have been planted and furnish an excellent opportunity for study.

Several varieties of hawthorns adapt themselves to our area. They bear short spines or thorns, are slow growing and somewhat difficult to transplant. They all have attractive flowers in May-June and colorful fruits in September-October.

Downy hawthorn, *Crataegus mollis*, 30 feet, is a single trunk tree with wide spreading branches, and large red fruit that hangs on for several weeks in the fall. Fine specimens of this tree are growing on the south side of Cheesman Park. In the spring the trees are showy with white bloom. In the fall the scarlet fruits, $\frac{1}{2}$ inch or more in diameter, as they fall make a bright red carpet under the trees.

Cock spur hawthorn, *Crataegus crusgalli*, 20 feet, is a low spreading tree with numerous thorns. The many fruits are almost black and hang on all winter. The white flowers appear

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in early summer. Well established examples of this tree are growing on Monaco Boulevard.

Washington hawthorn, *Crataegus phoenopyrum*, 30 feet, has an attractive shape and bright red fruits which remain all winter, looking like holly berries. This gives a nice winter effect.

The English hawthorn, *Crataegus oxycantha*, 30 feet, has spreading branches and stout spines. The leaves are broad, deeply lobed, toothed only in the upper part. Its flowers are in large clusters and are produced in immense quantities. The fruits are scarlet. This tree is well suited to the small garden or as a specimen tree on the lawn where not much shade is desired. A sport from this tree is called Paul's scarlet English hawthorn with brilliant rosy red, double flowers. This is one of the choicest ornamental trees. A Paul's scarlet thorn has become well established in the south court of East High School. It is a lovely sight in late May. There are also a few scarlet thorns on the northern boundary of City Park, near the Museum.

European mountain ash, *Sorbus aucuparia*, 20 to 30 feet, is an excel-

lent small shade tree. It has clusters of white flowers in the spring, orange red fruits from July to winter, and fern like leaves which turn yellow in the fall. This tree may be recognized at any season by the wooly fuzz that whitens the buds, twigs and the lining of the leaves.

Golden rain tree, *Koereuteria paniculata*, 25 feet, is also known as the varnish tree. Its ornamental climax is in July when large terminal panicle (to 15 inches) of small four petaled yellow flowers marked at the base with an orange maroon band cap the tree with gold. As they age the flowers are shed in a golden rain.

In full sunlight the golden rain tree develops into a symmetrical round topped, small tree, artistically branched with doubly compound leaves. The fruit is a three-sided inflated green pod the size of a walnut and shaped like a Japanese lantern. Enclosed within is a pea sized seed which darkens to almost black as the pods change to tan and eventually to brown. The golden rain tree is an adaptable tree and is growing well in various sections of the city.

“Insult not nature with absurd expense,
Nor spoil her simple charms by vain pretence;
Weigh well the subject, be with caution bold,
Profuse of genius, not profuse of gold.”

—Abbé Delille

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A view of the pool with the mountains in the background.

Our Own Pool and Waterfall

By LUCILLE P. ESMIOL

Editor's Note: If you "own" a view, a scrub-oak wild area, and a stream running through your property, would you have the ingenuity and imagination necessary to create your own mountain look with pool and waterfall? Even if your property comprised only 6½ acres? That is what Mrs. Esmiol and her husband accomplished in the Broadmoor area south of Colorado Springs.

This article may serve as an inspiration to others who have a similar opportunity but lack the courage to "go and do likewise".—MWP.

ALWAYS in my mind's eye, I have pictured in the garden at the base of our view a waterfall and pool, which if placed would seem to blend the mountain, pool and garden into one logical composition.

This imaginary picture became a reality this past summer due to the efforts of my husband and one helper. We began to collect the necessary elements: hundreds of rocks were hand-picked, each well covered with lichen, several oddly shaped pines were placed in strategic spots and sedum, ferns, shrubs and benches were assembled, and no effort could be spared to make our project beautiful enough to deserve proximity to the natural picture.

Our particular spot comprises about ½ acres, and is in the center of a beautiful wild area of 50 acres, ten

minutes from town and five from the Broadmoor Hotel. A stream runs through all the property and only about 20 feet from the house.

All the land has a heavy growth of scrub-oak, pine, fir, aspen and fruit trees, honeysuckle, wild gooseberries, chokecherries, raspberries, clematis, tanbark, wild smilax, wild roses, cattails, tules, and many varieties of wild flowers and poison ivy. Conservation methods have been employed in regard to all but the last named.

We endeavored to create a feeling of space and simplicity with more emphasis on the natural growth than on flowering plants. We have made great use of native stones, water, space and mountains, peacocks, pheasants, ducks and guinea fowl.

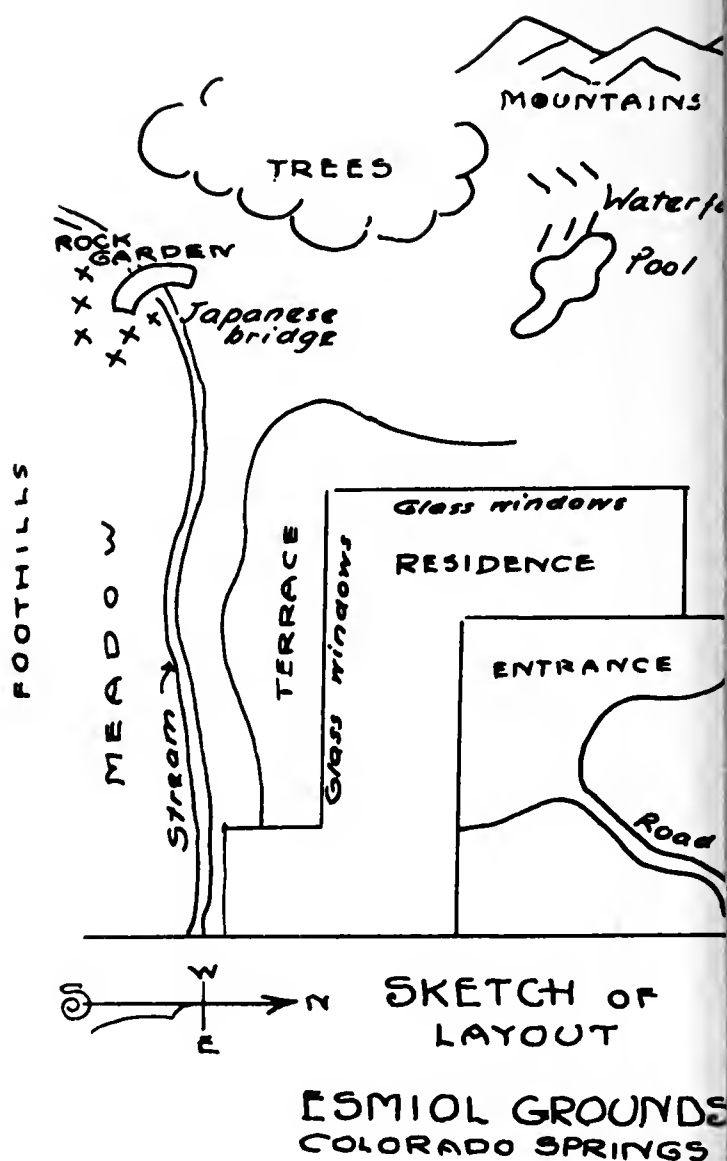
As shown on the sketch one glass

side of the house faces south, another to the west. On the south side the lawn rolls gently from the terrace to the stream. Beyond it is a meadow and foothills, both heavily wooded. Likewise on the west, the grass is in the foreground while at the end of the 100 foot plot is an entrancing group of scrub-oaks, trimmed high. Through one side of these we opened up a large vista where the mountains provide a breathtaking view of a range and mesa of great beauty and interest.

With a modern house whose interior tends to the Oriental, we felt that the same kind of treatment should be given the garden. Together with Japanese lanterns for atmosphere, Bonsai trees had to be acquired, real ones which I had yearned for over a matter of years. Talking this over with my mountain climbing husband resulted in his transporting 6 of the most entrancing gnarled and oddly shaped specimens, approximately 2 feet high and many years old. They were procured in our mountains at timber line. The Japanese method of moving, etc., was followed as minutely as possible. They have now been transplanted for seven months, and I am jubilant in stating that they show every sign of surviving.

We are grateful to the Japanese for their example and the lessons we have learned from them. It seems only sensible, however, now that the Bonsai trees are not allowed to be sent into this country from Japan, that we, over here, should take up the art, not only of bringing them from the mountains, but raising them from seed and slips.

Everything being ready for final designing and assembling, I realized to my dismay that I was really thinking in terms of a large flower arrangement, while the actual medium was stones and earth. The usual method of moving flowers here and there for maximum effect was not too feasible with those materials. So suddenly realizing



the long-suffering men at this point must be alone and unhampered to finish a man's job, I with one final gesture darted like a humming bird from tree to tree pinning up directions and pictures. Then I quickly left the scene and departed for the mountains.

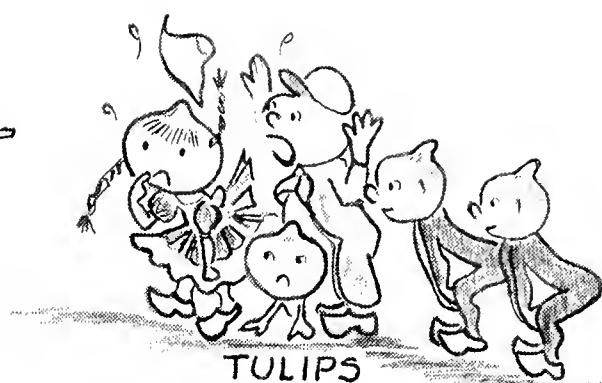
Any fears I may have had as to the outcome were unfounded for with husband as artistic as he is practical the project emerged to everyone's satisfaction, a perfect compliment to nature's background.

This pool is just to the right of the dense thicket of scrub-oaks, which still further provide us with an Oriental feeling for they have accommodately taken on a thick covering of lichen too. The dense shade amongst these trees provides a truly sylvan dell where one can rest in cool comfort on the hottest of days, listening to the splash of the waterfall on the one side and the gurgling of the stream on the other.

Keep 'em Covered

with Salpiglossis

By EDNA LUCAS



SALPIGLOSSIS

"Keep 'em covered," the edict of the T.V. Western, is common gardening practice for the seasoned spring-bulb enthusiast. Many fill the void left by early bulbs with candytuft, sweet-william, or verbena, but have you tried salpiglossis, the velvet-tongue flower?

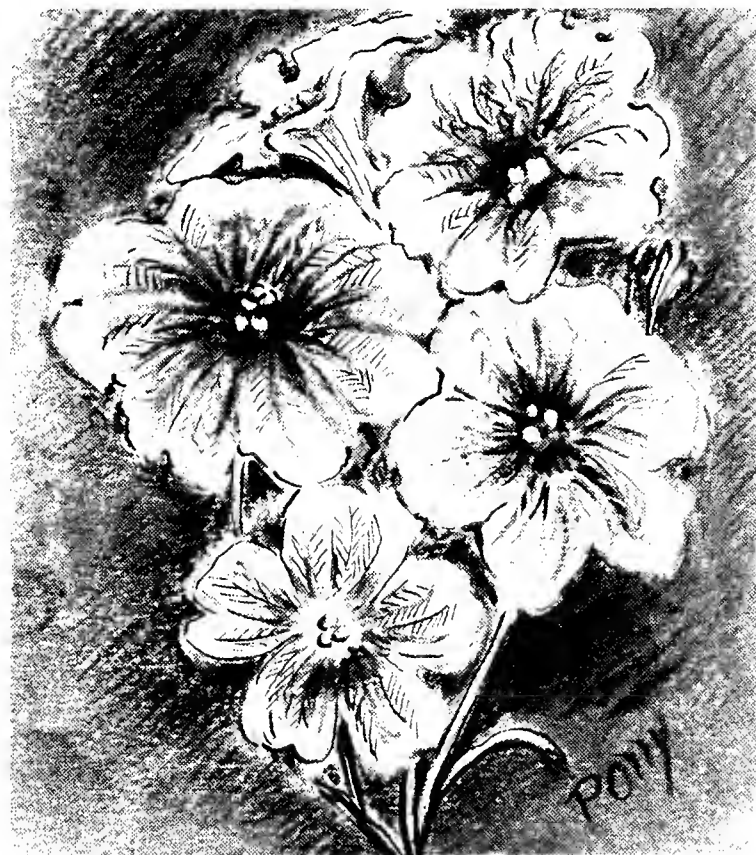
Neither the botanic nor common name adequately depicts the sheer loveliness this annual displays. A member of the nightshade family, the 30-inch plant has the customary sticky foliage of its relatives—petunia, tomatillo, and tobacco. Its velvety blossoms are funnel-shaped and come in a delightful array of colors, all delicately veined with gold; brown, deep blue, red, pink, purple and yellow.

A saleslady introduced "sappyglossis" in our first year of gardening. For us it has been true "idiots' delight"; for lo, these 17 years, we have been rewarded with flowers of unusual beauty. So distinctive was our first effort, a bed about six by 30 feet at roadside near our mailbox, that our suburban postman left a note asking the name of the flowers and adding that they were the only ones on his route. The following spring a neighbor inquired, "Are you going to have those pretty 'jawbreakers' again this year?"

A wonderful cut-flower, the "jawbreakers" are sold only in mixtures; yet the colors blend as harmoniously

as those in rich brocade. Plants may be purchased in flats in spring. According to some, seeds are difficult to start. Despite our ignorance, for us the seed has germinated and reseeded readily. In fact, soil has been transferred from one bed to another with no concern for future seedlings, but an excellent unplanned bulb cover resulted. Plants respond to a minimum of water, a prime consideration when covering bulbs.

Why don't you try "keeping 'em covered" with velvet flowers? No pistol or sheriff's badge required.



Salpiglossis.

What Do You Want to Know About Plants?

M. WALTER PESMAN

MORE than ever before you can get information in 1960 about almost anything in the plant and garden line. This article may help you. There are many fountainheads of wisdom.

It is typical for America that so much of this information is absolutely free to the public.

Every county has a county agent, whose business it is to help the public with anything that has to do with agriculture, horticulture, gardening, soils, insects, plant diseases, spraying, and even in the layout of your home grounds. In Denver the telephone listing is under Denver, as County Agricultural Agent. In many counties the county agent and his staff are in the County Courthouse.

You can also get a number of free bulletins from the same office. They are free because they are paid for by state and county money.

The City of Denver also pays for a City Forester and you can get free advice on trees from his office. Bulletins on gardening and forestry from the Department of Agriculture are often available in the offices of County agent and City forester. They can be ordered from the U. S. Superintendent of Documents in Washington, D. C. at a small price. Your senator or representative may be willing to get them for you.

The Extension Department of Colorado State University in Fort Collins will send you bulletins on request and without cost as long as you are a Colorado citizen.

"But how about the Colorado Forestry and Horticulture Association and the Denver Botanic Gardens? Aren't they public bodies?"

"Public-minded, yes, — supported by tax-money, no." The Green Thumb with its wealth of information, is made possible only through the membership of the Colorado Forestry and Horticulture Association, and through the generosity of some civic-minded people and civic-minded bodies. They feel that the work done by that organization is so important that it should be supported. (And only a few persons know by name who they are).

Technically then, you should be a member to have the right to telephone its office at EAst 2-9656. What a treasure house of information it has proved to be. Again, as a member you have the full right to browse in the Helen Fowler Library, belonging to the Association and acknowledged as the best horticultural library in the Rocky Mountain region.

By this time almost everybody interested in plants knows the location of the Botanic Gardens House at 909 York Street. It houses not only the Colorado Forestry and Horticulture Association but the Colorado Federation of Garden Clubs as well. And it is owned by the Denver Botanic Gardens. Naturally it is Headquarters for that organization. Again, a fertile source of information!

"That, however, is paid for by the City and County of Denver, isn't it? Just like the botanic garden in City Park?"

In this case the answer is not as simple as before. The City does contribute, and the eighteen acres adjoining Botanic Gardens House is in City ownership. Yes, but—

Whereas the municipality, this year has made available \$36,000 for maintenance, there is a very large sum de-



Botanic Gardens House, 909 York Street

ated by people devoted to the ideals of the Denver Botanic Gardens. About two hundred thousand dollars have already been used on house and grounds, another three hundred thousand is needed for the completion. Where is the money to come from?

Denver is very fortunate in having a number of forward-looking and dedicated people, people who are willing to make a significant contribution in money and/or services, to make the botanic gardens among the most outstanding in the country. Where but in Colorado can you find a location where the visitor can see the glory of plants from the temperate zone to the arctic zone (on top of our high peaks) in just four or five hours' driving.

What do you want to know about plants? Telephone the county agent or the "Green Thumb" office, see them in the botanic gardens in their full glory, consult the herbarium and the library; listen to the radio hour

KLZ Saturdays 10:15 a.m. (Pat Galavan), read the garden columns in the papers, — just to mention a few of the most obvious ways.

There are 3200 members in the Colorado Federation of Garden Clubs, (headquarters in Botanic Gardens House.)

There are 210 members in the 11 Men's Garden Clubs of Colorado. You can get information there if you are a member. There are some garden clubs, like the Home Garden Club of Denver, totaling 300 members, not federated. They are again, excellent sources of information.

Interested in iris? Gladiolus? roses? penstemons? succulents? Again, there are societies devoted to these special flowers and plants. All of them keep in close touch with Botanic Gardens House and the Colorado Forestry and Horticulture Association.

The Universities of Denver and Colorado have special courses in gar-

dening, plant culture, etc. They'll send you their catalogs.

The Botany Club of Denver covers the scientific aspect together with the universities and the Botanic Gardens. Again, headquarters at the same 909 York Street.

"Jumping at conclusions is not often conducive to a happy landing," it has been said. With so much information at hand, it doesn't seem we need to

jump at conclusions where plants are concerned, does it?

The exciting part of it is that these organizations are now working together, and that you'll get the same truthful answers from each. Yes, and in other cases, you'll get the same answer from all: "We still don't know the answer to that question as yet. But we are working on it! Come help us

PLANTING FOR HOME BEAUTY

Planting a tree is one of the most important of all the autumn, winter, or spring jobs you may do to increase the beauty and value of your home. But use care both in selecting the tree and the spot where you plant it.

Choosing wisely among the many tree species available may be quite a problem. As recommended by the National Arborist Association and other horticultural authorities, your selection should be based on the principal purpose the tree is to serve, and its adaptability to the location in which it is to be planted.

A tree can be useful primarily because of the shade it provides, or its chief function may be that of making the home harmonize better with its surroundings. It may serve strictly as an ornamental feature, valued for its form, foliage, flowers or fruit. A single tree, or a group, may be used as a screen for privacy, a windbreak, to block out an unattractive view, or to frame a vista.

Ability to survive in the climate of your area is a factor that usually can be discounted if you purchase from local nurseries. But you must consider the environmental conditions that exist at the planting site. These include shade and sunlight, soil moisture, drainage, structure and fertility; and atmospheric impurities such as smoke and dust. Tree species vary considerably in their requirements and tolerance with respect to such conditions.

After you know the "job" you want your tree to do and the environment it must endure, you are ready to consider species. Study nursery catalogs and books on home landscaping. Visit public parks and, if possible, an arboretum where you can see a wide variety of tree species. Consult reliable arborist nurserymen or other plant specialists; they can give you good advice.

Each tree species has inherent characteristics which may influence your choice. Some grow rapidly, others very slowly. Some species exceed 100 feet at maturity, while others never grow taller than 20 to 30 feet.

Certain varieties cast such dense shade that grass will not thrive near the base of the tree. Some trees — cottonwood, for example — cause objectionable litter when they drop their seeds. A few species are highly subject to storm damage due to brittle wood or the tendency to develop weak branch crotches. Some are particularly susceptible to insects and diseases.

Finally, put to use the information you have acquired and select the species that most clearly meets your needs and conditions. Planting wisely is no small job. But the result, the creation of permanent beauty for your home, is well worth the time and effort required.

—National Arborist Association.



n Cristobal Lake. This 350 acre potential park site, acquired by Hinsdale County is to be transferred to the State Parks and Recreation Board for preservation and development.

ARKS —

The Outward Visible Symbols of Democracy

BY EDMUND WALLACE

*Rocky Mountain Chapter of American Society of Landscape Architects
Photos Courtesy Denver Parks Dept.*

***Woe unto them that join house to house, that lay field to field, 'til there
is no place that they may be placed alone in the midst of the earth."***

—Isaiah, V-8

NEED FOR DECISION

We cannot put off 'til tomorrow what should be done today. Tomorrow will be too late! Decisions we make today will determine how decent a living place this country—Colorado and our town—will be during our life time and for generations to come. Already, the ominous crash of falling axes is heard across the land as bulldozers commit silvicide, gouging the earth where once stood woodlands or groves of cool, green shade. They are cutting across towns and wilderness alike, turning huge patches of green countryside into vast smog-filled deserts that are neither city, suburb, nor country, and, at the rate of some 3,000

acres a day, more countryside is being bulldozed under.

The critical factor is TIME! We have an option, but it is a forced option. Not to act now is to make a decision and we cannot, as William James remarked, wait for the coercive evidence. Our boldness and vision will determine the issue!

THE EXPLODING METROPOLIS

What is this all about? Many of you have read the recent penetrating articles concerning the phenomenon of the "exploding" American metropolis by such men as Christopher Tunnard, William H. White, Jr., John T. Howard, Kiplinger and others.



Old stage trail along Arkansas River near a potential "Recreation Wayside" proposed by the State Parks and Recreation Board.

NATIONAL TRENDS

Since 1947 the United States has grown by 30,000,000 people. This was the nation's total population on the eve of the Civil War. Demographers tell us it will have grown another 30,000,000 by the end of the 1960's. If these trends continue, and everything indicates that they will, the United States may have 225,000,000 inhabitants by 1975.

TRENDS IN COLORADO

Colorado's overall population has grown at the rate of 50,000 persons each year since 1950. Its percentage of gain between 1950 and 1955 was 21.7; *twice* the national average!

Growth has been tremendous in many Colorado cities.

Westminster has nearly 6 times its 1950 population; Aurora more than 3 times; Littleton far more than doubled; Edgewater has nearly doubled; Thornton, a city not even in existence in 1950, is now a city of over 10,000 people.

REASONS FOR GROWTH

Seventh largest of the 48 states,

Colorado is only 33rd in population—but this picture is changing daily. A leader in agriculture and stock raising world-known for the blueness of its sky, the clearness of its air, and its general desirability as a place to live has made Colorado one of the fastest growing states in the nation with an estimated population of 1,811,000 as of April 1, 1960.

Our strategic location has brought federal centers, munitions, aircraft and missile plants, army, navy and air force training centers. Colorado leads the nation in oil shale and bituminous coal reserves. It has more than 250 metallic and non-metallic minerals and ranks first among the 48 states in molybdenum, second in feldspar and fluorspar, and among the top three in uranium and vanadium. Consumption of these resources for commercial ends and the relentless march of material progress of urbanization and industrialization are making their impact on the landscape. What seemed like a plethora of space available for recreation is contended for by all of these other interests, even to demanding that some



Upper left column: This Pinon pine grove in Larimer County, owned by the State Land Board, is being quarried for limestone. The State Parks and Recreation Board hopes to preserve at least 50 acres of these 800 year old trees.

Upper right column: Popularly known as "Roxborough" Park, this unique geological formation is recommended as a Regional Park by the Inter-County Regional Planning Commission.

the space already designated for parks be used for other purposes. Never before has our landscape changed so rapidly. Never have we exploited a natural resource so irretrievably.

RECREATION RESOURCES AND VALUES

We should remember at this point the value of recreation resources in stabilizing and balancing out a healthy economic climate for all of Colorado. Out-of-state vacationists have increased 146% in the last 10 years. These four million people last year spent some 250 billion dollars. This tourist money is unique in that it is "new money" that is placed in circulation. One dollar in every eight spent in Colorado retail trade comes from outside of the state. It is estimated that tourists paid nearly 3 1/3 billion dollars in gasoline tax, more than 2 1/2 million dollars in sales tax, and nearly 1 1/2 million dollars in hunting and fishing licenses. State residents and visitors spent nearly 80 million dollars on hunting and fishing in 1958.

Richard Collett said, "The wealth of a nation is in its soil, its water, its forests, and the things they produce and produce. When all the gifts of nature

that can be commercialized have been converted to dollars and cents, this will be a poor place in which to live."

NATIONAL PARKS AND FORESTS

This threat to the wonders of nature, the magnificent and diversified scenery in places like Rocky Mountain National Park, led to the conviction 45 years ago that here were lands too fine to have their beauty or their interests cheapened or destroyed by turning them to base uses for the advantage of the few or of the moment. "This place should be preserved by us for others after us to enjoy as we have enjoyed it." This was the thought behind the growing public demand for parks at all levels of government in the early 1900's. Many of the finest municipal park systems in this country were largely acquired during the first two or three decades of this century as a result of the action of farsighted civic leaders and city authorities. These lands were dedicated as parks in a period when leisure was far less abundant than it is today, when cities were less congested and when the importance of space was less widely recognized or urgently needed.

When the National Park Service was instituted in 1916, both of the state's National Parks, Rocky Mountain and



Vega Reservoir. A Bureau of Reclamation project will provide a 900 acre lake in this area. Largest of the Grand Mesa lakes, this will provide, with 700 acres of land, a 1600 acre State Park about 40 miles east of Grand Junction.

Mesa Verde, were already established as well as the Colorado National Monument. Dedication of five other monuments in the state followed in close succession. Today, Colorado's National Park Service areas of 525,470 acres serve $3\frac{1}{8}$ million people (1957).

Americans cherish and enjoy the last remnants of our continent's primeval grandeur. As proof, over a quarter of our population, 46 million people, saw them in 1953. A majority believe that these areas belonging to them are safe forever and that their children, and their children's children, will always have them to enjoy.

They do not know that demands are constantly being made, by a misinformed portion of the public, for uses in the National Parks and Monuments, that were never intended, uses that are in direct conflict with the ideal of leaving them unimpaired for all time. They are generally unaware of the powerful pressures that exist for the invasion of such areas as Colorado's Dinosaur National Monument. They are ignorant of the fact that

Congress fails consistently to supply necessary funds and seems to measure the worth of the parks and monuments solely by the yardstick of public entertainment, material resource values, and the number of people who visit them yearly. Despite these obstacles, the National Park Service continues to expand. Under the "Mission 66" program, the Service hopes to provide sufficient facilities by 1966 to meet the public demand on such areas.

The United States Forest Service, too, with its five-year "Operation Outdoors" program will add additional recreational facilities to Colorado's eleven National Forests which comprise over 13 million acres.

The newest addition to the National Park system in Colorado is Shadow Mountain National Recreation Area, 10,230 acres, established in 1952. Containing Shadow Mountain and Granby Lakes, which are impoundments of the Colorado-Big Thompson project, the park has facilities for boating, fishing, camping, picnicking, hiking and horseback riding.



Thornton, Colorado. Not even in existence in 1950, is now a city of more than 10,000 persons. Adequate planning for park and recreation areas is a problem with rapid growth.

STATE PARKS

Because these National Park and Forest Services have done such an excellent job in Colorado, and because of Denver's Mountain Parks system, there has been, until recently, little support for a state park and recreation system. But Colorado's total out-of-the-city park lands provide less than 1/10 of an acre for its people and visitors. The average for the United States is 1/8 of an acre and most of it, as in our state, is in the National Parks and Forests, far removed from the centers of population.

There is a need for preservation and development of scenic areas by all levels of government. In state, no less than in national parks, we should always be alive to our obligations before it is too late to set aside, in reasonable proportion, outstanding representative areas of forest, desert, mountain, lake-shore, rivers and marshland.

Mr. Harold Lathrop, Director of our State Parks and Recreation Department, has recently completed a long-range master plan. He says, "Every effort should be made by the

State of Colorado to establish a system of state parks as quickly as possible, which could well comprise ten to fifteen areas of at least 25,000 acres and to continually expand the program so that by 1975 there would be not less than forty units with a total area of approximately 58,000 acres to supplement the program of the local, county, district and federal agencies, and thus truly make Colorado the "TOPS IN THE NATION FOR RECREATION".

If Colorado is to keep pace with its twenty "sister" states west of the Mississippi, which spent more than 40c per person in 1957, providing attractive areas for tourist and vacationists, it could justify providing approximately \$650,000 immediately for state park and recreation area acquisition. It has been recommended to the General Assembly that it establish ways and means which will raise ample funds each year for capital improvements to assure the continuing development of state park and recreation areas. How can you help. By giving the program your support in the legislature. Un-

less an informed public aggressively insists on its right to adequate park and recreation areas, the vanishing wilderness and the vanishing frontier will be joined by a vanishing opportunity for outdoor recreation.

Robert Moses reminds us that, "Prosperity, without prudent control, physical growth, without regulation in the common interest, movement, without plan or purpose, pursuit of happiness, with no common objectives, prolongation of life, without cultivation of leisure, this is not civilization. **PARKS ARE THE OUTWARD VISIBLE SYMBOLS OF DEMOCRACY!**"

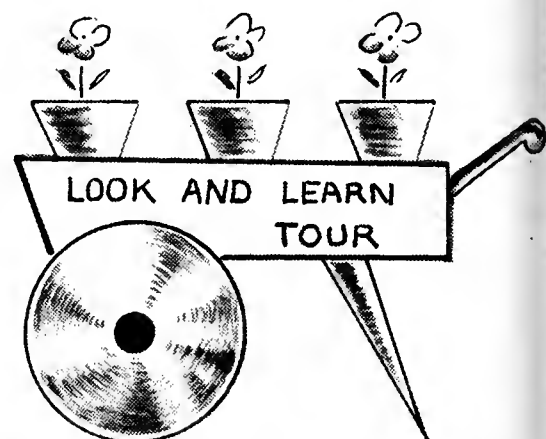
In conclusion, it must be assumed

that time will substantiate the present estimates of a greatly expanded population. In looking back from the year 1980 or 2000, how will we who have the opportunity to create a better community, be judged? Will we be satisfied to "let nature take its course" or will we, as planners and builders of a whole new community, provide parks and open spaces so necessary to the well-being of our future citizens. If we settle for nothing but the best then we must weld together the community forces of private citizens and officials at all levels of government. *This task belongs to YOU!*

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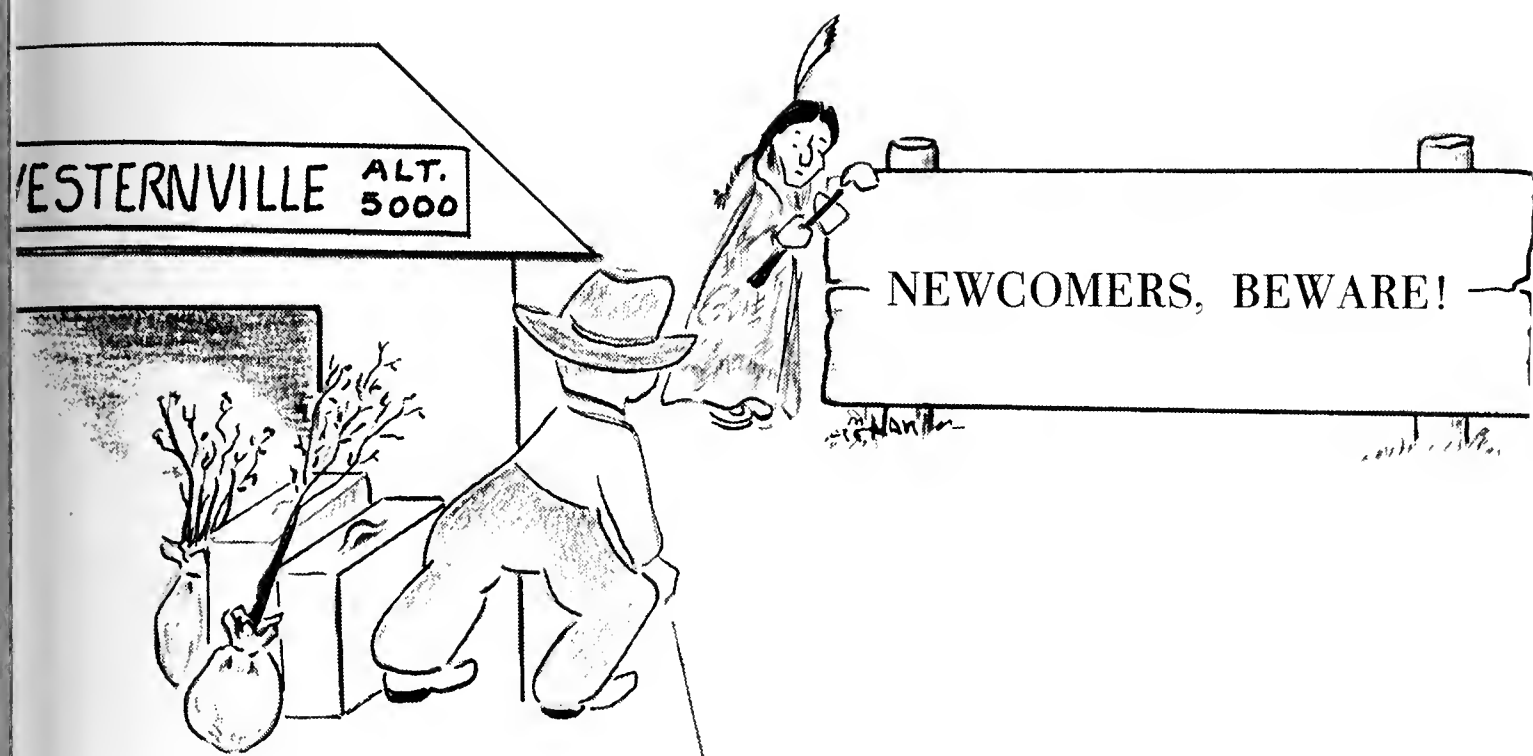
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If your thumb glows a luminous purple since gardening in Colorado, don't despair; plant with care!

Plants, like people, develop certain characteristics to enable their survival under various conditions. People adjust readily to different environments by varying the amount of clothing they wear, eating foods with high or low fat content, turning the thermostat, moving to a warmer or cooler part of the house or garden.

Conditions affecting plant growth are temperature, humidity, intensity of sunlight, amount of rainfall, hot dry winds, alkalinity of soil, alternate freezing and thawing, and drought.

Human newcomers to this area immediately recognize their physical needs for comfort and survival, but few realize the newcomer plants' peculiar requirements. Each year thousands of disappointed gardeners mourn the loss of an expensive magnolia, flowering dogwood, mimosa or arbutus.

In 1953 plant experts from the state agricultural college, the bureau of plant entomology, landscape architects, nurserymen, city forestry and parks department met in an attempt to classify plants by their various degrees of hardness for this region. The following list of trees and shrubs is presented

to warn newcomers and novice gardeners about the inadvisability of attempting to grow such plants unless they recognize the risks involved. Some plants, such as rhododendron or mimosa, might survive two or three years in a protected location near a house until an extremely cold winter kills them. Occasionally a plant has survived in this region despite lack of proper conditions. Although new varieties must be tried to expand the list of plant material hardy here, key plants and basic plantings should be made with reliable material supplied from reputable firms that furnish correct planting advice.

Plants with a survival optimum of two percent in a protected location include:

- Abelia
- Acacia
- Andromeda, Pieris
- Azalea
- Buxus, Box (all varieties tender except Korean Box)
- Callicarpa, Beautyberry
- Calluna, Heather
- Camellia
- Carya, Pecan & Hickory
- Castanea, Chestnut
- Cedrus, Cedar-of-Lebanon and all true cedars
- Citrus
- Clethra, Pepperbush
- Cornus florida, Flowering Dogwood
- Diospyros, Persimmon
- Enkianthus
- Erica, Heath

Eucalyptus
 Franklinia, Gordonia
 Fuchsia, Hardy Fuchsia
 Gardenia
 Hydrangea, Tree Hydrangea
 Ilex, Holly
 Kalmia, Mountain Laurel
 Lagerstroemia, Crape myrtle
 Liquidambar, Sweetgum
 Magnolia grandiflora, southern
 soulangeana, saucer
 stellata, Star
 Mimosa, Sensitive plant
 Nandina
 Nerium, Oleander
 Nyssa, tupelo, Black Gum
 Photinia, Christmasberry
 Rhododendron
 Sassafras
 Sciadopitys, Umbrella Pine
 Sequoia
 Taxodium, Baldcypress
 Taxus baccata, English Yew
 chinensis, Chinese Yew
 Vaccinium, Blueberry
 Xanthorrhiza, Yellowroot
 Zelkova

A second list includes plants capable of survival in protected locations—by planting on the north or east side of a building, rock or other shrubs; by providing more acid soil (never apply lime, our problem is alkalinity); by wrapping the trunk or erecting temporary shade as protection from hot afternoon sun; or by mulching to prevent alternate thawing and freezing. This list includes plants with a survival optimum of 10 to 20 percent when planted under normal conditions in Denver, and with protection survival possibilities are increased.

Abies balsamea, Balsam Fir (data on lasiocarpa, alpine & lasiocarpa, arizonica, cork-bark, very scarce)
 Acer palmatum, Japanese Maple
 platanoides, Columnar Maple
 Aesculus, parviflora, Shrub Buckeye or
 Bottlebrush
 pavia, Red Flowered Buckeye
 Bambusa, Bamboo
 Berberis julianae, Wintergreen
 verruculosa, Warty Barberry
 Calycanthus, Sweetshrub
 Carpinus, Hornbeam
 Carya, Hickory
 Cassia, Senna

Catalpa bignonioides, Umbrella Catalpa
 Ceanothus americanus, Redroot
 Cercidiphyllum, Katsuratree
 Chamaebatiaria, Fernbush, Desertsweet
 Chamaecyparis, Falsecypress
 Chilopsis linearis, Desertwillow
 (good in southern Colorado)
 Clematis montana, Anemone Clematis
 (all other Clematis good here)
 Cotoneaster dielsiana, Diels Cotoneaster
 horizontalis, Rock
 apiculata, Cranberry
 Cytisus, Broom
 Daphne cneorum
 Deutzia
 Fagus, Beech
 Fraxinus quadrangulata, Blue Ash
 Ginkgo, Maidenhairtree
 Hamamelis, Witchhazel
 Holodiscus discolor, Creambush
 (tried little)
 Hydrangea vine
 blue
 quercifolia, Oakleaf
 A.G. & P.G. prefer shade

Hypericum, St. Johnswort
 Jasminum nudiflorum, Winter Jasmine
 Juglans cinerea, Butternut
 regia, Persian Walnut
 Juniperus excelsa, Greek Juniper
 Kerria
 Laburnum, Goldenchain
 Ligustrum ovalifolium, California Privet
 Liriodendron, Tuliptree
 Lonicera fragrantissima, Winter Honeysuckle
 Maclura, Osage Orange
 Magnolia acuminata, Cucumbertree
 Mahonia aquifolium, Oregon grape
 Ostrya, Hophornbeam
 Picea abies, Norway Spruce
 glauca, White Spruce
 Pyracantha, Firethorn
 Pyrus, Pear (subject to fire-blight)
 Roses, Tree Rose
 Sapindus, Soapberry
 Staphylea, Bladdernut
 Tamarix africana, Tamarisk
 Thuja, Arborvitae
 Viburnum acerifolium, Mapleleaf V.
 cassinoides, Witherod V.
 dilatatum, Linden V.
 molle, Kentucky V.
 rhytidophyllum, Leatherleaf
 tomentosum, Doublefile.

Planting of Chinese Elm, Black Locust and Poplars is discouraged since they are subject to extreme damage by insects and storms.

REPORT OF STREET AND SHADE TREE COMMITTEE

The State has the power to take such lands as it needs for highway purposes, according to a Colorado Supreme Court decision of February 16, 1960.

This far reaching decision is applicable to all parts of the state. It is doubtful if the average citizen is aware of its implications. Already its effect is evident in the City of Denver. In the next few years the application of this ruling is certain to have a detrimental effect on the Denver Park system as well as those of other municipalities—all under the name of “progress and necessity”—we are told by the State Highway Department.

There was very little protest several years ago when the City, on the grounds of traffic necessity and safety, widened Federal Boulevard and removed all trees from Colfax to 52nd Street. There was apprehension but no formal protest when, on the same grounds, Josephine Street was extended north from Colfax to 18th Avenue and, in the extension, the south-west corner of City Park was sacrificed, involving some 5 or 6 acres.

Perhaps the City authorities were not aware of what they had started. About that time the State Highway Department requested City Council for seventeen feet of land to be taken off the east side of City Park for the widening of interstate highway U. S. 87.

Its climax came in the February 16 decision of the Supreme Court wherein the Court said,

“It is clear that there are no limitations on the type of property that can be acquired by the state through condemnation proceedings, or otherwise, for highway purposes.”

The majority opinion, written by Judge O. Otto Moore, further said,

“Where a municipality holds title to land that has been dedicated to long continued use for park purposes and the charter provides that park lands shall not be leased or sold at any time does the charter provision prevent the state under its power to condemn land for highway purposes in that restriction from acquiring such land?”

This question is answered as follows: “The state has power to acquire by condemnation, or otherwise, lands of a municipal corporation already devoted to public use.”

The decision indicated that municipal lands needed for highway purposes may be obtained by negotiation, but in the absence of any agreement the state may then resort to condemnation. The Court states that an agreement was reached in the Colorado Boulevard case.

Those who feel that trees and parks are a necessity for urban living in the 20th century are at the cross roads. Shall we give up in despair and say that nothing can be done? Everything must give way to the automobile and super highway. But no sooner are super highways completed than they are over crowded with new corps of machines.

Or shall we oppose each new proposed park invasion and, at least, insist that where park lands are taken for highways the city be recompensed with lands of equal value for parks to be located elsewhere? Should our Street and Shade Tree Committee be revived and urged to study the situation to see if anything can be done by legislative action to save values that we consider important?

Dear Member, what do you say?

Fred R. Johnson

CRABGRASS CONTROL

By JESS L. FULTS*

CRABGRASS often infests and ruins the appearance of an otherwise fine lawn. Crabgrass is a summer annual that grows from seed produced the previous year. The plant is very sensitive to shade but will grow under a wide range of soil conditions. One plant may mature hundreds of seeds during its short growing period. The first frosts will destroy the plants. Seeds will remain alive for many years just waiting their chance to grow. Seeds may start to grow in late April and germination may continue throughout the summer.

Chemicals can help eliminate crabgrass. The use of chemicals should be considered a supplement to good cultural practices. Practices that will aid in developing a good turf cover and in turn will leave little room for crabgrass to develop are:

1. Spring and fall applications of the proper fertilizer, particularly nitrogen.
2. Adhere to a minimum cut of 1½ inches on the bluegrass type of lawn. Two inches is even better.
3. Water as needed to penetrate 6 to 8 inches into the soil. Avoid frequent light sprinklings. Wetting only the surface of the lawn encourages crabgrass and discourages the desirable grass.

Proper maintenance is seldom found on all lawns in a neighborhood. Crabgrass seed many spread from lawn to lawn. It is often necessary to use chemicals (herbicides) to control crabgrass. Before deciding on the methods of attack the following questions should be answered satisfactorily to make the control program most effective.

*Head, Department of Botany and Plant Pathology, Colorado State University, Fort Collins, Colorado.

Do I actually have crabgrass? Many weed grasses are often mistaken for crabgrass especially in the early stage of growth. Some resemble crabgrass in the seed stage. Chemicals used to control crabgrass will not generally control the other weed grasses. If you are not sure the weed is crabgrass take a specimen to your County Agricultural Agent or wrap one or more complete plants in aluminum foil and send to: *Botany Department, Colorado State University, Fort Collins, Colorado.*

How severe is the infestation?

The degree or severity of infestation will determine the control method to be used. A scattered few plants may be pulled out by hand. Mild, spotted infestations can be eliminated in a few years by hand pulling and proper cultural practices. When the infestation is moderate to severe combining proper maintenance with chemicals. When solid stands appear complete reseeding of bluegrass in late summer may be the answer.

What chemicals should I use?

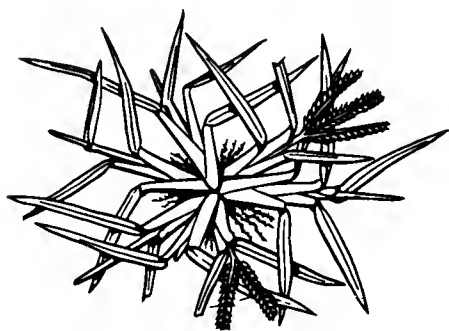
Chemicals containing 2,4-D and 2,4,5-T, or mixtures of the two will not control crabgrass. Many different chemicals have been used to control crabgrass with more or less success. Many have been tested at Colorado State University and many are being tested now.

The best chemicals for spring and early summer application:

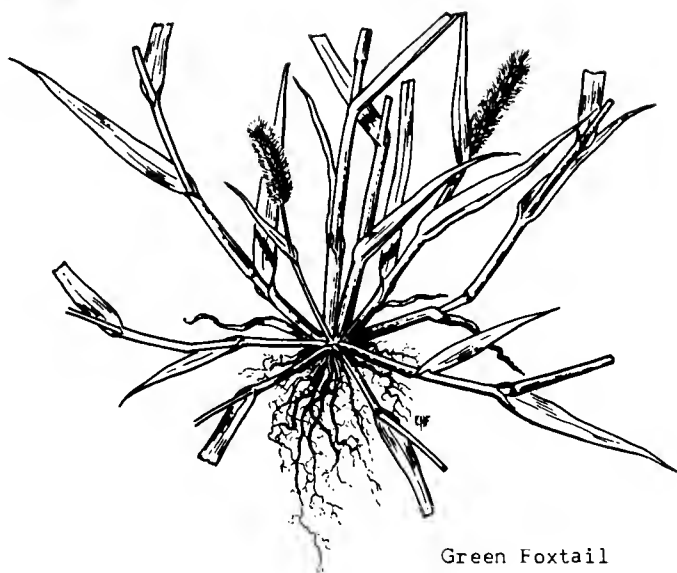
(April 1 to June 1) and which have been tested from 1954 to 1959 are dry granular formulations of chlordane and dry granular formulations of lead arsenate. Several new chemicals, tested for the first time in 1959, appear to be equal or better than the chlordane



Crabgrass



Goosegrass



Green Foxtail

Crabgrass is a familiar summer marauder, but other annuals such as goosegrass and foxtail may be mistaken for crabgrass by the inexperienced. After spraying, a quality seed mixture can be sown through the dried remains of the weed grasses. Photo Lawn Institute.

and lead arsenate formulations. These new ones include calcium arsenate formulations which are being released by several companies. These new ones also include Zyton (Dow Chemical Co.) and Dachtol (Diamond Alkali Co.) All of these new chemicals will be available in limited quantities for use in 1960.

The best chemicals for use in early to late summer:

After the crabgrass can be easily seen in the lawn are formulations containing phenyl mercuric acetate (PMA or PMAS), formulations containing arsenic (DSMA-disodium mono-methyl arsenate hexahydrate), or potassium cyanate (KOCN). As a group these chemicals have the disadvantage of causing temporary burn on turf of the

desirable grasses at least in some degree. The potassium cyanate has the advantage of supplying available nitrogen as a by product of its use as a weed killer. Several new chemicals are now being tested and some may replace these older ones in the near future.

A word of caution; crabgrass herbicides should not be applied to new lawns. Wait until the new lawn is well established and has been mowed for several weeks. **IN ALL CASES FOLLOW THE MANUFACTURERS DIRECTIONS.** This is necessary because the various trade materials vary in active ingredients and must be used at the prescribed rate per 1,000 square feet of area to be covered. In addition, if used carelessly they can be dangerous to people and pets.

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COMPOSTING

By IRENE (MRS. JOHN) SCOTT
Colorado Federation of Garden Clubs

Horticulture is the gardener's mainstay. As soon as she learns how to grow fine specimens, she wants to share her prizes with those around her. But neighbors are limited. So the gardener looks beyond her immediate surroundings toward a community flower show. It is there that more can marvel at the miracles produced from a packet of seeds, as recorded in the following poem, obviously written by this unknown author before inflation:

Only A Package Of Seeds

I paid a dime for a package of seeds,
And the clerk tossed it out with a flip;
"We've got 'em assorted for everyone's
needs,"
He said with a smile on his lip.
"Pansies and poppies and asters and peas—
Ten cents a package, and pick as you
please."
Now seeds are just dimes to the man in
the store,
And dimes are the things that he needs;
And I've been in to buy them in seasons
before,
And have thought of them merely as
seeds,
But it flashed through my mind as I took
them this time:
"You have purchased a miracle here for
a dime!"
You've a dime's worth of power which no
man can create,
You've a dime's worth of life in your
hand!
You've a dime's worth of mystery, destiny,
fate,
Which the wisest cannot understand.
In this bright little package—now, isn't
it odd?
You've a dime's worth of something
known only to God!
These are seeds, but the plants and the
blossoms are here
With their petals of various hues;
In this package of pellets, so dry and so
queer,
There's a power which no chemist can
fuse.
Here is one of God's miracles soon to
unfold:
Thus for ten cents an ounce is Divinity
sold!

Divinity extends to plants too, which are about as economical as seeds, at all angles considered. Many don't have the space required for sunning seedlings indoors, either. Time is another factor in springless Colorado if you want to get a jump on the seasons.

Show people talk about grooming plant material for exhibition to the extent that you might be inclined to attach undue significance to last day preparations. Good nursery stock and seeds well grown will reduce this readiness routine. Granted expert grooming can do for plant specimens what the right clothes, hair style and cosmetics can do for women. But both need a good heritage in the proper environment. Best bet is to put your money in top-name varieties. Place same in super soil for healthy plants with ample growth that'll discourage disease and insects.

Selecting entries from such a cultural background is play. Especially if you've deep-watered (irrigated or used a soaker) a few days ahead, and then sprinkled the morning before. Here in Colorado we cut *mature* plant material with a sharp knife (no shears please) the p.m. prior to entering. The general idea being that the sugar content within the plant reaches its maximum capacity about four to five o'clock, depending upon several factors. This pre-show preparation of cut plant material is called conditioning or hardening.

Books have been written about conditioning. One of the more popular is Victoria R. Kasperski's "How to Make Cut Flowers Last" price \$2.95 may be ordered from National Council of Books; or obtained from the Federation's library. But wherever blue ribbon horticulturists meet, you'll hear different methods of prolonging flower's freshness. I suggest you do

ome experimenting. All I do after a little attention to stems (sear the bleed-ers, etc.) is to submerge them up to their blooms in tap water overnight in the laundry tubs.

Several days before this last, long night, I have referred to notes, seed catalogs or saved packets as to the *varietal* names of all entries I hope to exhibit. Now, a marigold, for example, has a common name; *Tagetes* is a Latin botanical name, classified as African, Dwarf, French, etc., plus its special variety such as Harmony (one of the Petite's); Cracker Jack (a giant); Climax (a hybrid); etc. But it is this last, the variety, that the public is interested in, because that is the easiest and often only way to get a power "Just like I saw in the show."

With this information, print (really better) or type the common, Latin and *varietal* names on a strip of paper and attach to the stem (usually right under the bloom) with tape, paper clip, pin, etc. This will endear you to the public, the judges and the show committees, especially classification and entries.

To facilitate entering, often a prolonged procedure and sometimes a bottleneck, have your entry cards made out in advance. (You may have to photocopy them on different paper for the Entries Committee.) Consult your schedule, which will list *divisions*, horticulture, design, educational, etc.; *sections*, annuals, perennials, fruits and vegetables, etc.; *classes*, zinnias, asters, poppies, etc.; *sub-classes*, probably indicated by a-b-c-etc. and listing sizes, colors, varieties, etc.; and sometimes

more *sub-classes*, usually using numerals 1-2-3 etc.; and with a further defining.

Suppose you want to enter your Fantasy Zinnias. Schedule in hand, you note that horticulture happens to be *Div. II*; annuals are *Sect. I*; zinnias are *Cl. 26*; "Medium flowered 2 to 4 inches" is *b* (A sub-class) and "Fantasy, 5 blooms" is the second sub-class, number 2. Put all italicized words and figures on your entry card, plus your name and address, and you'll be regarded as somewhat of a genius.

Principles and rules modified in accordance with the schedule are followed when entering your design, arrangement or what ever you call your artistic achievement. It's a smart idea to again take up your pen or typewriter and describe your creation for the judges and public on a small white card. This is a surer way of having your plant masterpiece interpreted as you intended.

An example of the above was followed at a last season's Iris show. The theme was "Love in June" and the class the "Groom's Stag Party", stressing originality. The plant material (and it is well to list this on the card, too.) was red iris, shading from light at the top to reddish brown at the container's edge. Iris buds, Lamb's Wool (now a lamb, but soon a ram), blades (lilies-of-the-valley foliage). Container, reddish-brown ice-bucket. Base, man's dark brown pants. Accessory, bottle of Old Stag liquor (really coffee). On the accompanying card was: "Buds and young blades,

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with ice-bucket, bottle of Stag, and pants (which his wife will wear from now on) typify the *Groom's Stag Party*."

Shows, as well as stags, in this area are growing up. They are out of their milk bottles. But with maturity comes added responsibility. Thus, more and more shows are trying advance entries, usually in just one division as a starter. And most clubs consider it more important to know the number of entries in the artistic division. Controlling the entries is invaluable to the staging and entries chairman, and all committees to a lesser degree. Advance entries can make the difference between an ordinary show and one figuratively out-of-this-world. It's almost a must for an open show, such as the one the Sunshine Seeders, Littleton is sponsoring Friday, June 17 at the Arapahoe County Fair Grounds.

A show is considered open when anyone may enter, as contrasted with a closed show where only members may exhibit and keep the ribbons themselves. This show, with the theme "Suburban Solariums" is being given in co-operation with the Arapahoe County Fair Board, and will replace the adult show formerly given in connection with the Junior Fair and Little Britches Rodeo. Anyone wanting a schedule may write Mrs. Edith Shakespeare, 700 Littleton Blvd., Apt. 4, Littleton. Advance entries in design division only. The show committees want many, many entries. They have room galore, something of a rarity heretofore.

Rare too is the floral design of fresh plant materials that lasts. About the only way it can be captured is via photography. Even a small show has its quota of slides, colored and regular films. All of which is fine, only such shutter-bugging doesn't go far enough. Referring specifically to reproduction for contests such as the calendars put out by Helen Van Pe Wilson and added by National Council for the first time this year. Many state put out their own calendars and worry no more about finances, I'm told.

The person to take these photographs for any commercial purpose (newspapers and magazines, greeting cards and stationery, etc.) is a professional photographer. His name and price should be included in the schedule. And he should be given an opportunity to take the photographs before the public is admitted. Sometime he might do them before the judging or follow the judging. Persons wishing their designs taken could leave their names and copies of entries with a designated show committee, who would give it to the photographer.

Photographing floral designs is a specialized art, portraiture, architecture etc. Floral knowledge and experience are essential. I'd suggest you clubs interest a photographer in your area, and give him all your floral work, which will make it worthwhile for him to become expert in a field that is recognized as different if not difficult. The Denver area is fortunate in having Art Gore whose posy pictures are winning national recognition.

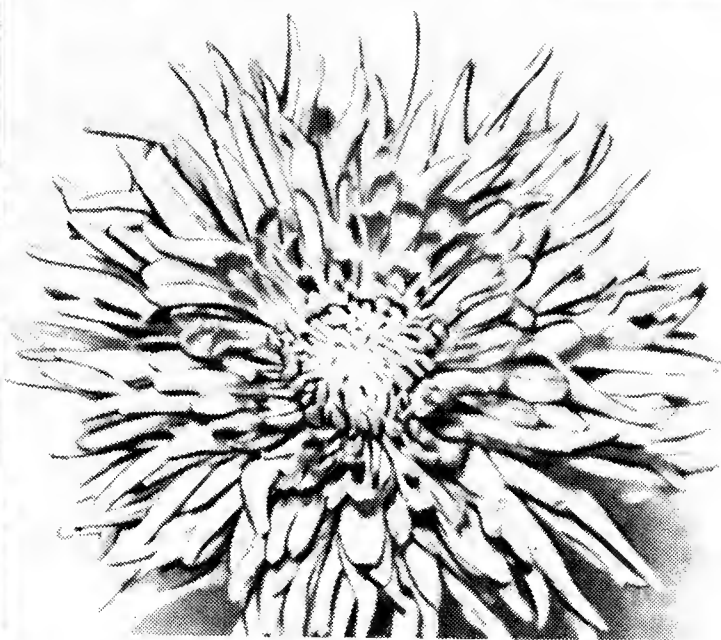
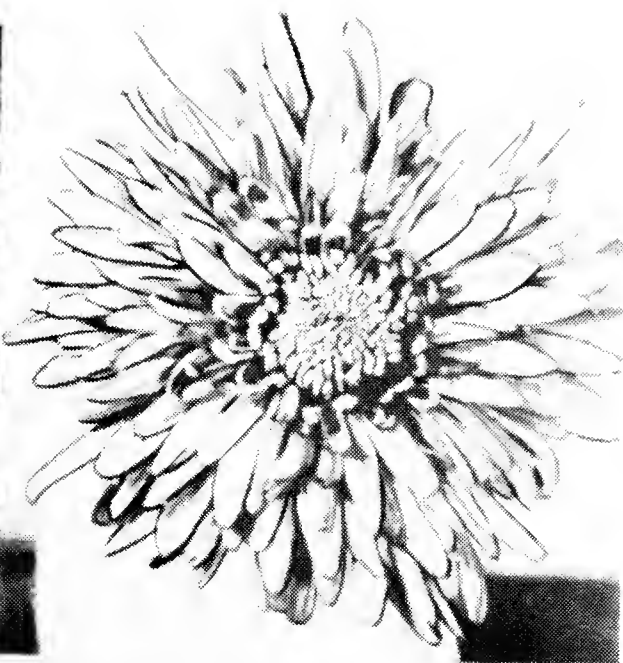
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1960 All America Mum Selections. Left—Pink Cherub. Above—Headliner. Below—Mardi Gras.

Mums For Longest Lasting Flowers

By W. RAY HASTINGS

THE one quality that people want most in a flower appears to be its ability to last long in the vase. This is the wonderful world of Mums miles ahead in the estimation of millions because, of all garden flowers, mums are the longest lasting. Weeks after they have been cut and brought to the house, they still maintain the pristine freshness of their garden days.

How this quality affects their popularity can be judged by the fact that France growers of the small Chrysanthemums have had to increase their production as much as 10 and 20 times in order to keep up with the demand

for these cut flowers. In America, long-lasting Mums are steadily reaching new heights of popularity as more and more people become acquainted with the improved Mums today, among them the buttons, pompoms and large flowered varieties. Planted in spring, they produce their flowers from early fall to hard, killing frosts, thus providing gardeners and homekeepers plenty of bright fall color first in the garden and then in the house for a long blooming season. They bloom so profusely that even though whole sprays of bloom are cut for the house, plenty remain on the bush to decorate the outdoor scene.

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Of all the Mums available today, perhaps the winners of the All-America Mum Selections are the most noteworthy.

There are ten varieties which to date are entitled to wear the title of All-America Winner. Each of them underwent rigorous testing in various gardens scattered about the country, and emerged the victor in competition with numerous candidates. Judged during this period by impartial experts working under a strict system of scoring, the All-America Winners then become available for America's gardens through reliable nurserymen and garden centers. Each of the AAMS winners carries its own name tag which identifies that variety as a winner, and which serves to protect the buyer.

The three winners for 1960 are Mardi Gras, Headliner and Pink Cherub. Mardi Gras, as its name implies, is gay and colorful — a red and gold, fully double, large-flowered beauty. The opening flowers are red-orange and change to golden yellow so that there is a two-toned effect at all times. Mardi Gras flowers are as big as 4 to 4½ inches, making a wonderful splash of color on the two-foot plant.

Headliner has terra-cotta bronze buds which open to rich walnut-coral with a gold haze on the petal reverses.

It's a masterpiece from the strong, erect, two-foot plant to the magnificent 4-inch flowers.

Pink Cherub, a pompom type, resembles a miniature honeycomb with tightly packed, tubular petals and 1½ inch, neat, round flowers. The color is purplish-pink with a reddish-purple center—very attractive.

The All-America Winners for 1958 and 1959 include Ruby King, Crimson Lady, Flair (a lively lavender), Emperor (bright, golden yellow), Showpiece (royal rose), Girl Friend (pink to coral-rose) and Burning Bronze (tangerine, bronze and orange medley).

All of these make wonderful cutting plants and provide bushels of blooms. Easy to plant and needing a minimum of care, they are exceptionally satisfying both as garden plants and as a rich source of flowers for the house. Planted in spring, they reward the gardener from mid-September on, blooming with great abundance and with the gayest of colors.

Whether you order these outstanding AAMS Mums from your garden center or by mail from your favorite mail order nursery, this much is sure . . . your satisfaction will be great, for no flower in the fall is as long-lasting as brightly colorful and as dependable

EVERYTHING FOR THE GARDEN

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DIG THESE QUESTIONS



Question: How soon can I plant onion sets?

Answer: Onion sets may be planted early as March. They may also be planted as late as May and give good results.

Question: When is the best time to prune a forsythia?

Answer: Prune your forsythia a week or two after it has stopped blooming. Pruning before it blooms deprives you of part of the flowers.

Question: My coleus plant keeps dropping its leaves. What is wrong?

Answer: You are probably keeping your coleus too wet. This is a very common cause of leaf-drop in house plants. Cut down on the amount of water you are giving, soaking the plant thoroughly when you do water, but permitting it to dry out between waterings. Also, be sure your plant has good drainage. Coleus plants do not like "wet feet."

Question: What are "tetraploid snapdragons?"

Answer: Tetraploid snapdragons have a $4n$ chromosome number, or 4 times the normal haploid chromosome number. Ordinary snapdragons have a $2n$ chromosome number, which is the normal number for flowering plants. Tetraploid plants are generally larger and heavier-stemmed than normal $2n$ plants.

Question: Can the Peruvian daffodil be grown successfully in Denver?

Answer: Yes. The Peruvian daffodil (*Hymenocallis calathina*, *Ismene*

calathina) is a lovely flower which should be seen more in the Denver area. It bears a flat-topped cluster of large, fragrant white flowers with funnel-shaped crowns and fringed lobes. Peruvian daffodil is rather tender, and bulbs should not be set out until all danger of frost is past. They grow rapidly to maturity. The bulbs must be taken up in the autumn and stored in a cool place. Care must be taken in digging the bulbs, as they put out a number of fleshy roots which should not be broken off.

Question: How soon can I set out my geranium plants?

Answer: Not until danger of frost is past. In Denver, it is advisable to wait until Memorial Day.

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LAWN SEED RECOMMENDATION

BY CHAS. M. DRAGE

Extension Horticulturist, Colorado State University

It is easy to avoid serious mistakes when choosing seed for a permanent lawn. When time and desire do not permit a close study of the various grass species and mixtures that are available for planting, then plant straight Kentucky or Merion Kentucky bluegrass. By doing this you can avoid costly mistakes says C. M. Drage, extension horticulturist, at Colorado State University, Fort Collins.

Fifty cool-season mixtures and lawn grass species were planted at the U. S. Department of Agriculture, Beltsville Station, in October, 1953. After five years of study the results were recently published in the Agronomy Journal by Doctors Juska and Hanson.

By 1958 they found that the best mixture was 75% Merion and 25% red fescue. Also, that 75% common Kentucky and 25% red fescue was superior to common bluegrass seeded alone. Merion was significantly better than common bluegrass over the 5-year period. Mixtures of Merion and common were superior to common bluegrass alone.

It was also found that mixtures with bentgrasses or Alta or Kentucky tall fescues *should not* be planted.

In considering what to plant, certain facts must be kept in mind says Drage. First, a good stand of a single species makes a nicer appearing lawn because the texture and color is uniform. Second, since no one species of grass is perfect, because of disease and other factors, a mixture of two or three adapted perennial species will likely result in a higher quality turf.

In considering the characteristics of the adapted perennial species let us consider Merion first. Compared to common it is darker green in color; it can be mowed slightly shorter and it is less susceptible to common leafspot; these are factors in its favor. Merion germinates more slowly; it requires a high fertility level "from 6 to 8 pounds of actual nitrogen annually per 1,000 square feet," and Merion is quite susceptible to rust. Common bluegrass is less damaged by leafspot when grown at lower levels of fertility, 3 to 4 pounds of nitrogen annually per 1,000 square feet.

Red fescues do better than the blue grass strains in shady areas and on droughty soils. Their color is a lighter green and they are more difficult to mow.

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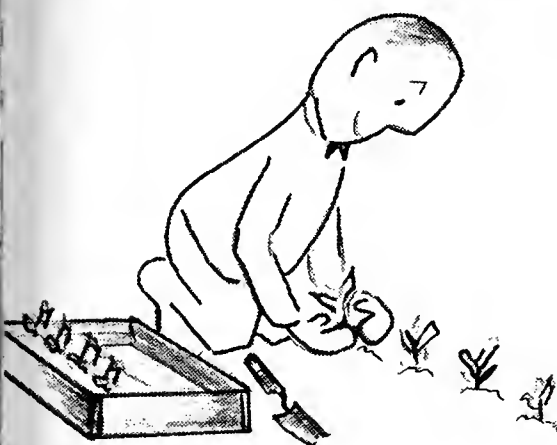


Seasonal Suggestions



PREPARE FLOWER BED

May is usually a pleasant month with many of our early flowers, trees and shrubs in bloom. To really enjoy it, you have to get out and see them. Plan a trip around the parks and parkways early in the month to see the lilacs, tulips and flowering crabs. A trip to Canon City to see the cherry trees in bloom is always nice, and this year should be especially good for wild flowers on the plains and foothills. Toward the end of the month the iris in the Botanic Gardens and in Boulder should be coming into bloom. Take notes on the times when these various plants are in flower. Such notes come in handy when you are planning a garden for continuous bloom.



TRANSPLANT ANNUALS

The planting of bare root trees and shrubs should be done in the fore part of May if possible. The longer such planting is put off, the greater gamble it becomes. If you can't get such items planted early, don't worry as practically all nursery stock will be available in containers throughout the summer season.

You can safely plant most vegetable and annual seeds around the 15th of May. You should wait until Memorial Day to set out your bedding plants. This is to make sure they're not caught by a late frost. Perennials such as shasta daisies and mums can be divided and transplanted now. To do this, dig a clump, break off the young plants on the outside, plant them and throw the center portion of the old plant away.



CUT ROSES

The early blooming shrubs such as lilacs, snow balls and others should be pruned as soon as they finish blooming. Don't just shear off the tops of these shrubs, but keep them young and vigorous by cutting out some of the older canes clear to the ground. If you repeat this each season you can maintain a dense compact shrub indefinitely.

It's usually safe to unhill your roses the first or second week in May, and at this time to prune them. On good healthy strong bushes, cut back only to live wood. On weaker bushes, remove spindly canes and dead wood.



SPIDER MITES

If the weather turns hot you may need to water your lawns. Just remember that when you water do a thorough job of it. Soak the lawn deeply and infrequently, an inch of moisture per week is adequate for good growth of blue grass lawns.



TRIM HEDGE



PRUNE FLOWERING SHRUBS

Speaking of lawns, weeds like dandelions will be growing vigorously now, so start your control spraying as soon as possible. 2,4-D will kill most of the broadleafed weeds if put on when the temperature is in the 70's. Water a day or two before you plan to spray, then hold off watering four or five days after spraying for best results.

Don't spray when the wind is blowing and be careful with 2,4-D around your roses and other plant materials as it can seriously injure them.

Like weeds, some of the insect pests will put in their appearance this month. Make it a regular practice to inspect the plants in your yard. Look on both surfaces of the leaves and on the stems for the insects themselves and for signs of injury caused by them. There are several good multiple purpose sprays on the market that will control the major portion of these pests. Get a bottle now and keep it handy along with one of the easy to use hose sprayers. If you have large trees to spray, we suggest you contact a commercial arborist.

Plan to attend our plant auction. You will find many fine plants for your garden at reasonable prices and you'll be helping your Association by your purchases. Remember the date, May 7 and 8, at Botanic Gardens House, 909 York Street.



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The Green Thumb

Magazine for Rocky Mountain Gardeners



NATIONAL
CONVENTION
AND
ROSE SHOW
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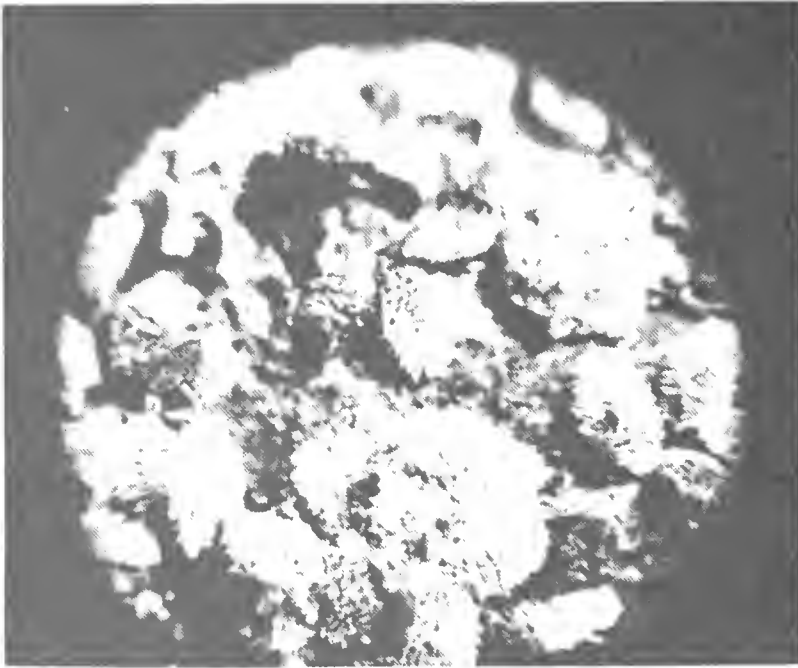
WORLD'S
LARGEST
FLOWER
SHOW
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GARDENING
WITH
COLORADO
BUILDINGS II
Page 168

JUNE
1960

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JUNE
Vol. 17
No. 5

The Green Thumb

Colorado Forestry and Horticulture Association

Organized in 1884

"To preserve the natural beauty of Colorado; to protect the forests; to encourage proper maintenance and additional planting of trees, shrubs and gardens; to make available correct information regarding forestry, horticultural practices and plants best suited to the climate; and to coordinate the knowledge and experience of foresters, horticulturists and gardeners for their mutual benefit."

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DENVER 6, COLORADO

Calendar of Events

The Garden Guide, Pat Gallavan,
KRMA-TV Channel 6, Thursday at
9 p.m.

The Green Thumb Program — Every
Saturday morning on KLZ at 10:15
a.m.

Fun with Flowers—A lecture and dem-
onstration, followed by the mak-
ing of arrangements. Each person
brings containers, mechanics, and
materials. The workshops are open
to everyone. They will be held each
month at the following times and
places:

Workshop I—Botanic Gardens House,
909 York Street, 9:30 a.m., the
third Wednesday of each month.

Workshop II—Lakeside Denver Dry
Goods, 44th and Harlan, 10 a.m.,
the first Friday of each month.

Workshop III—Arapahoe County Fair
Grounds, Littleton, 9:30 a.m., the
third Tuesday of each month.

Floral Art Courses — Opportunity
School. Every Thursday, 9 a.m.-
11:30 a.m., 1 p.m.-3:30 p.m., 6:30
p.m.-9:15 p.m. There is no charge
except for materials.

BOTANIC GARDENS HOUSE MEETINGS

909 York Street

June 1—Botany Club, 7:30 p.m.

June 3—Civic Garden Club, 11 a.m.

June 6—Sunburn and Blisters Garden
Club, 9 a.m.

June 7—Mountain View Garden
Club, 10 a.m.

Green Thumb Editorial Committee,
2 p.m.

June 8—Colorado Federation of G-
den Clubs, Executive Board, 10 a.m.
Organic Gardeners, 8 p.m.

June 9—Lakes O' Bow Mar Garden
Club, 9:30 a.m.

Denver Rose Society, 7:30 p.m.

June 10—Colorado Forestry and Ho-
rticulture Association Finance Com-
mittee, 10:30 a.m.

Colorado Forestry and Horticulture
Association Board Luncheon, 11:00
a.m.

June 13—Judges' Council, 10 a.m.

June 14—Martindale Garden Club,
12:30 p.m.

Evergreen Garden Club, 7:30 p.m.

June 15—Fun with Flowers Work-
shop, 9:30 a.m.

June 20—Green Thumb Garden Club,
11:30 a.m.

June 23—Civic Garden Club, 1 p.m.

June 27—Golden Gardeners, 12:30
p.m.

July 5—South Denver Garden Club,
1 p.m.

Green Thumb Editorial Committee,
2 p.m.

July 6—Botany Club, 7:30 p.m.

July 8—Colorado Forestry and Horti-
culture Association Finance Com-
mittee, 10:30 a.m.

Colorado Forestry and Horticulture
Association Board Luncheon, 11:30
a.m.

FLOWER SHOWS

June 17—Sunshine Seeders Garden
Club, open flower show, Arapahoe
County Fair Grounds, Floral Hall,
Littleton, from 2:30 p.m. to 8:30
p.m.

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Look and Learn Garden Tours

JULY 13 AND 14

Gardens Designed For Outdoor Living

BY VELLA CONRAD

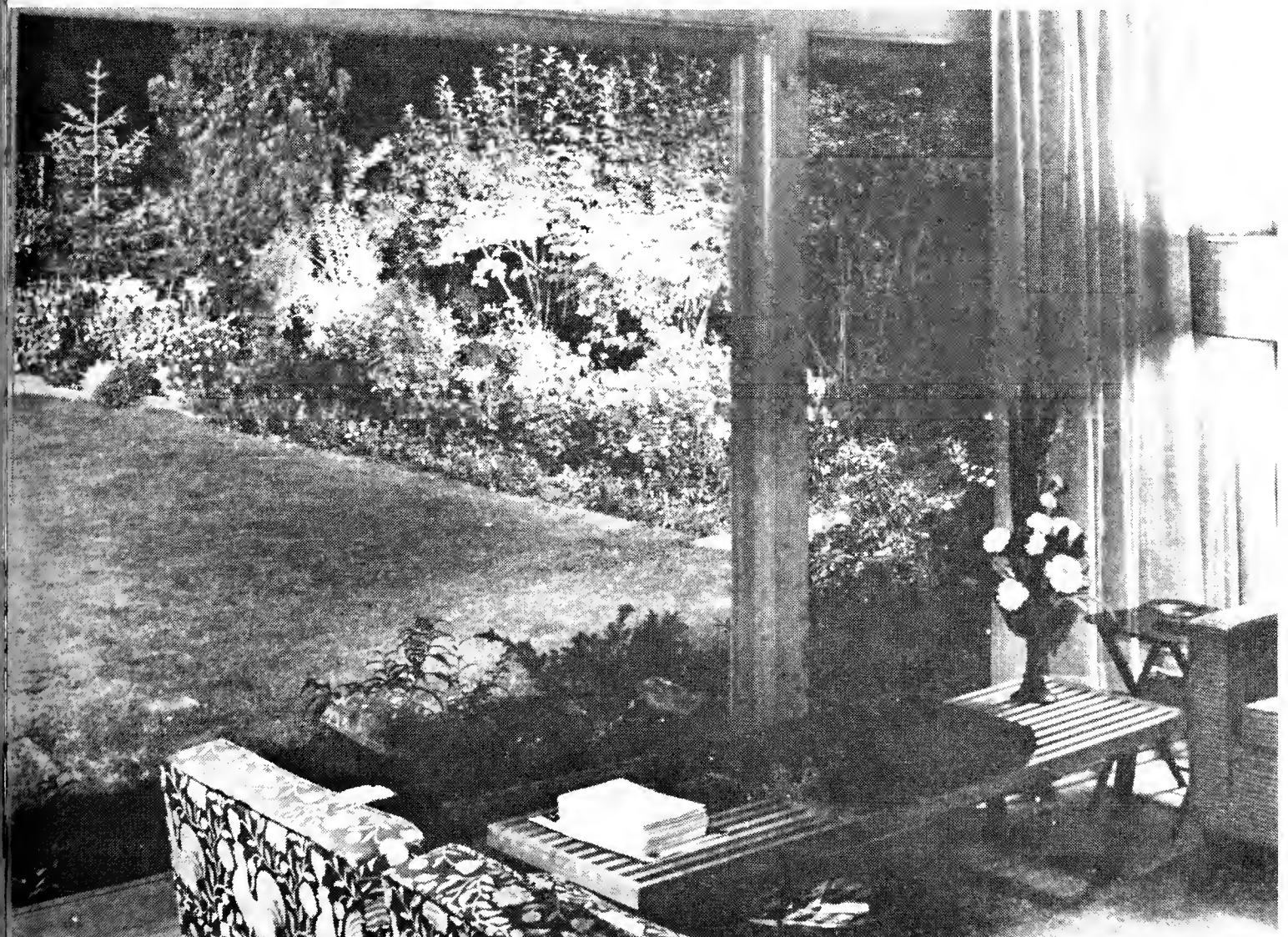
Each garden, like each individual, has a different personality. Gardens like homes often express the personalities of their owners.

THE last decade has brought about many changes in gardening. Probably the greatest is typified by the slogan we are using for our 1960 Look and Learn Tours, Gardens Designed for Outdoor Living. More and more people now want a garden in which to live as well as work.

Many clever features and methods are used to make for comfort, liv-

ability, and easy maintenance. Water in all forms, from bird-baths, pools, ponds and fountains, to flooded areas in winter for ice skating is used. Focal points are added to create interest and "conversation pieces."

Designs have been so cleverly worked out that you walk through sliding glass doors right onto the patio (complete with ovens, tables and all



A similar garden featuring night lighting will be on our garden tours and will be open in the evenings for your viewing pleasure.

kinds of equipment for outdoor living.) Screens, fences, and many types of roofing, extend the outdoor living period in this area many weeks, and well placed accessories add color and beauty the entire year.

Patios, fences, walls, pergolas, rocks, elevated flower beds, any and all are features used. Each garden, of course, being planned around the needs and wishes of the owner. Many gardens are planned for the future. They are first designed for the young family. With a few changes they accommodate the teen-age group and by further modification provide a garden for the owner's later years.

Garden lighting has become an art.

Correctly installed electrical equipment will add many hours to your garden enjoyment.

There are many different types of gardens, Japanese, Country, garden with specialized plantings of roses, geronias or unusual plants, and rock gardens with native plant material.

This year we looked at gardens with all of these ideas in mind, and we have found many beautiful and interesting gardens. We have planned two days of tours featuring night lighting in the evening.

Reserve the dates July 13 and 14. Come and enjoy with us the beauty and livability of these Gardens—Reserve your tickets now. Signed for Outdoor Living.

GARDENS TO BE SHOWN

LOOK AND LEARN GARDEN TOURS JULY 13, 14

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6210 East 17th Avenue

MR. AND MRS. ARTHUR G. RIPPEY
2525 East Exposition

MR. AND MRS. ERNEST C. GRAHAM
1200 South Shoshone

DR. AND MRS. N. L. SHERE
456 Cherry

MRS. ALFRED WATTS GRANT
300 Vine

MR. AND MRS. RICHARD SIMON
2 Viking Drive

MR. AND MRS. T. W. HENRITZE
2423 East Exposition

DR. AND MRS. REED JOHNSON
1601 South Windemere Avenue

MR. AND MRS. CHARLES WILMORE
575 South Harrison Lane

"For gardens, the contents ought not well to be under thirty acres of ground, and to be divided into three parts; a green in the entrance, a heath, or desert, in the going forth, and the main garden in the midst, besides alleys on both sides."—*Francis Bacon*

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View of 1959 Denver Rose Society Show held in the Denver U. S. National Bank Building. The judges may be seen in the background.

National Convention and Rose Show Of the American Rose Society

BY DABNEY OTIS COLLINS

ROSE gardeners from all over America will converge on Denver June 16-19, when the Denver Rose Society will be host to the American Rose Society National Convention and Rose Show. The convention will be held in the Brown Palace West on June 16 and 17. The show will be held in the Denver U. S. National Bank Building, June 18 and 19.

Registration begins at 8 a.m. Wednesday, June 15, in the Brown Palace West, and continues through the next two days. Every reader of the Green Thumb is invited to register for the three-day program. Your registration fee of \$4 entitles you to hear America's foremost authorities on roses. It also entitles you to a free Western buffet

luncheon on Thursday, June 16, in the Brown Palace West.

This is the first time that the American Rose Society National Convention and Rose Show has been held in Denver. As host, the Denver Rose Society, in cooperation with national headquarters, has prepared a program that measures up in every respect to the high standard of excellence of this national event. Never before have the home gardeners of metropolitan Denver had the opportunity to learn about the rose from such a galaxy of distinguished speakers.

Among the speakers will be our own George Kelly, founder and first editor of the Green Thumb, who will tell how to grow "Roses In the Sunshine



Mrs. Nat Schoon, President of the American Rose Society.

State." A fine photographer as well as a gifted speaker, Mr. Kelly's color slides of roses and rose gardens will delight you.

You will hear the world-famed hybridizer, Dr. Walter E. Lammerts, of Germain's, tell how you can profit from the secrets of commercial growers; Dr. David L. Armstrong, of Armstrong Nurseries, and Fred Edmunds, Jr., of the noted River Ranch Nursery in Oregon. Dr. A. C. Hildreth, director of the Denver Botanic Gardens Foundation, will speak on "Developing New Roses for the Mountain States," which sounds like a most interesting subject.

If you like old-fashioned roses—and a good many of us do—be sure to hear Dorothy Stemler, of Will Tillotson's Roses, tell about damask, moss, hybrid musk, chestnut, rugosa, Bourbon and hybrid perpetual roses. Her color photographs are so beautiful that they are called "rose portraits".

Highlights of the program is the hour-and-a-half demonstration of making rose arrangements by Cliff Mann of the internationally known Cliff

Mann Floral School, in Denver. About 1500 roses will be used in the demonstration by Mr. Mann, assisted by members of his staff. His course in training in floral designing is recommended by leading florists throughout America and in many foreign countries. Don't miss this one! Begins 10:30 Friday morning, June 17. Learn how you can make rose arrangements that beautify your home—and add joy to living.

The rose show opens to the public at 1:30 p.m. Saturday and closes at 5 p.m. On Sunday it is open from 10 a.m. to 5 p.m.

Erwin A. Andersen is convention chairman. Clinton B. Strickler is chairman of the rose show committee. He is assisted by Mr. and Mrs. George V. Kelly, Mr. and Mrs. Myron E. Nixon, Mr. and Mrs. Leonard G. Stuart, and Mr. and Mrs. Ray E. Turnure.

Open only to members of the American Rose Society are these national trophies: the Nicholson Bowl, entry for



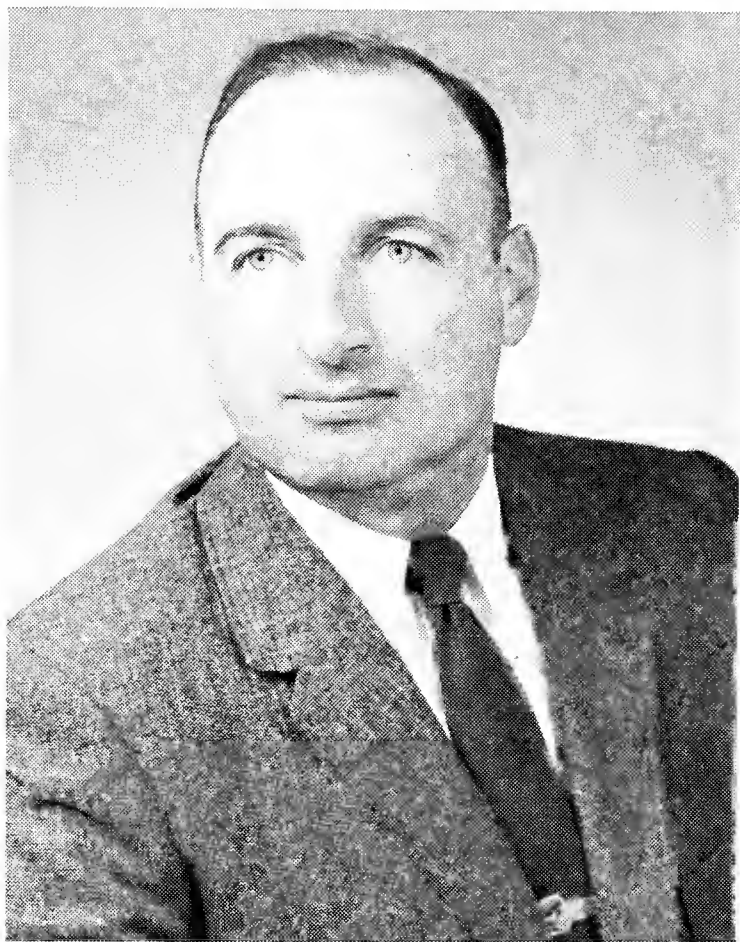
C. B. Strickler, Rose Show Chairman.

which consists of seven different varieties of hybrid tea roses; the J. Horace McFarland Trophy, entry for which consists of six different varieties of hybrid tea roses; the A. Eugene Pfister Trophy for the best grandiflora; the Flora Katherman Trophy for the best arrangement. Members of the Denver Rose Society who are ARS members are eligible to compete for these national trophies.

Also open to Denver Rose Society members — and only to them — are trophies for the best group of three hybrid teas, best floribunda, grandiflora, climber, single rose, miniature peace, and best single hybrid tea which

Queen of Show. The Albera Sweepstakes Bowl will be awarded to the greatest number of blue ribbons won in the specimen classes.

In addition, ARS certificates will be awarded to Denver Rose Society members as follows: Gold Medal Certificates for Queen of Show and best floribunda. Silver Medal Certificates for



Herb Gundell, President of the Denver Rose Society.

second best hybrid tea and floribunda. Bronze Medal Certificates for third best hybrid tea and floribunda.

Only members of the American Rose Society residing in the Rocky Mountain District are eligible to compete for the J. Horace McFarland Rocky Mountain District Trophy.

It is estimated that show entries will total about 1000. Those competing only for the national trophies will come from California, the Northwest, the Midwest, the Southwest and the East. Other entries will come from Utah, Colorado Springs, and other parts of the Rocky Mountain District. The Queen of Show will be a queen, indeed!

No one may enter roses in the show unless he is a member of either the American Rose Society (competing only for ARS awards) or of the Denver Rose Society. Those wishing information on the Denver Rose Society may contact the membership chairman, Pat Gallavan, distinguished editor of the Green Thumb.



Erwin A. Andersen, Convention Chairman.

CLIMBING ROSES

By ALICE QUINN

Home Garden Club of Denver, Inc.

NO ROSE, except certain tropical species that climb by hooked thorns are truly climbing in habit. That is, no rose is a climber in the same sense as ivy or a morning glory. In their natural state some cling to branches of supporting trees and shrubs by their thorns and prickles. Those generally designated as "climbers" are really varieties of vigorous growth that will easily accept attachment to any support. The stronger growing varieties can be used on trellises, porches, patios, fences, or be tied to posts or pillars, and they may even be used as hedges. There are some twining varieties which creep over the ground making mats or carpets and they are useful to prevent erosion or cover waste places; however, we do not see these generally in this area, probably because our slopes and waste places are too dry.

Climbers are, primarily, once-blooming, in June or July, but there are some sorts that bloom recurrently. *Blaze* is a continuous blooming Paul's Scarlet Climber, and *New Dawn* is a recurrently blooming sport of *Dr. Van Fleet*. In general climbers are of easy culture—they are hardy and require no winter protection here. The term "hardiness" however, is always relative when discussing plants which are



Climbing roses form a pleasant entrance to a garden.

intended to grow over a territory as vast as that of North America. Hardy climbers may be expected to endure without damage, the severest winter in those districts where peaches can be grown. Where the climate is colder they require protection in varying degrees, often the shelter of a wall or windbreak is sufficient. I understand that in the East it is necessary in most sections to hill up the roses for winter protection. There is a distinction between Hardy Climbers and Tender Climbers. Most of the Hardy Climbers quickly reach maturity and almost all will bloom the second year after planting. On the other hand, Tender Climbing roses frequently require much longer to become established and produce their best flowers on wood three or four years, or even more, old. The direct result of this is that Hardy Climbers may be enjoyed in regions where an occasional severe winter will cut them to the ground because after one season's growth they will renew themselves and be ready to produce a full crop of flowers. On the other hand the Tender Climber will require several years before it restores itself sufficiently to bloom well. For this reason the Hardy Climbing roses are grown almost everywhere in the continental

United States, and perhaps Alaska since it was warmer in Alaska in February this year than in Denver.

Climbers are of great importance in our gardens since they adapt themselves to various areas, and a nice thing about them is that they give a great color display in a little space. Even a clothesline post may be adorned.

There are, in general, two types of Hardy Climbers, based on two Oriental wild roses—*Rosa multiflora* and *Rosa wichuraiana*. Many of the earlier types of *multiflora* roses have disappeared because of the stiffness and awkwardness of the plants which made them difficult to train. These were the Rambler roses with stems thirty feet or more long and flowers generally small, borne in large clusters for several weeks in June or July. The original *Rosa wichuraiana* is an extremely vigorous trailing species, excessively twining, with shiny green foliage and single white blooms. Because of the more pliant character of their stems and the better resistance of their foliage to disease and also because it was easier to breed them in varied colors and larger blooms the Hybrid *wichuraiana* rapidly supplanted the Hybrid *multiflora*. There are three distinct groups—the trailers, similar to the original, with small flowers in clusters; the vigorous erect climbing varieties with small flowers in clusters; and the more recent and most important group including the tall-growing, large flowered varieties, many of which have blooms almost equal to the Hybrid Teas in quality. Their only fault is that as the size of the blooms increases the hardiness of the plants tends to decrease—this is particularly true of the yellow varieties.

Rose breeders have, for a long time, striven to produce Hardy Everblooming Climbers. There are as yet no established varieties that will bloom continuously all over the United States,

as many will not endure a Northern Winter. In this area they seem to fail more to be everblooming than in hardiness.

Climbing Teas, Climbing Hybrid Teas and Climbing Hybrid Perpetuals and Climbing Polyanthas, except for the climbing habit retain the general character of their respective types. Because of their larger growth they are frequently less prolific in bloom and are much harder to protect in winter where it is necessary to do so.

Since the climbers are usually set out "for good" they should be chosen wisely. Is your rose to adorn a post, a trellis, garden arch, or fence? If so, the eight to ten foot climbers are for you. In selecting climbers, first consider where they are to grow; then the period of bloom—some of the one-time bloomers go on for as long as six weeks. If you'd rather have less at one time but often, choose the ones called "everblooming".

Climbers should be planted about the same as Hybrid Teas—in a hole at least two feet square and deep. Any good garden soil, well drained, is satisfactory. They should receive sun for at least half of the day. If you must plant close to a hedge or shrubs, growers suggest that you cut off their invading roots several times a year by driving a spade at least eight inches into the soil in a two foot circle around the base of the rose. A newly set out climber, the same as any other rose where late frosts occur and Spring winds can be warm and dry—as in Denver — should be protected by mounding soil around the base of the canes. When leaves have sprouted about an inch remove the mound gradually (if all is taken away at once the shock might kill the rose). Other than this first "babying" climbers will need no protection in Denver. In fact trying to protect them may do more harm than good. Spring planting is best in this area.



Climbers add interest to a doorway.

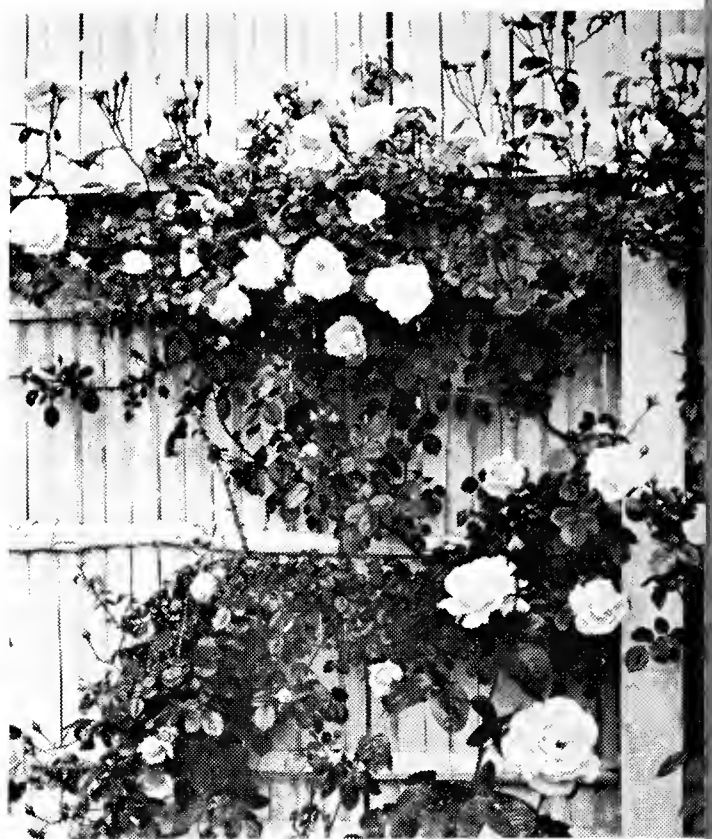
Photos courtesy American Association of Nurserymen.

The old varieties — Paul's Scarlet, American Beauty, Silver Moon, Blaze, Mary Wallace and Gardenia are a beautiful sight at the height of their bloom, and are definitely hardy. However, some of the newer varieties are well worth trying. After blooming, when the petals become dried and brown usually a stiff breeze takes care of any unsightly appearance.

Climbers are quite disease resistant; usually there are only aphids to watch for, and one spraying will take care of that. Of course, if the birds build nests in your climbers so that they cannot be sprayed the aphids will raise several families also until the nests are abandoned and regular spraying can be continued.

Some of the Tender Climbing varieties tried in this area with rather poor results due to our variable winters are:

- Climbing Lowell Thomas—*yellow*
- Climbing Forty-Niner—*bicolor*
- Climbing Picture—*pink*
- Climbing Peace—*yellow*
- Climbing Talisman—*bicolor*
- Climbing Chrysler—*red*
- Climbing Nocturne—*red*
- Climbing Mrs. DuPont—*yellow*
- Climbing Show Girl—*pink*



And here they break the monotony of the fence lines.

Climbing Golden Shower—a fairly new yellow

If you have a sheltered place, however, they would be worth trying for the result when they did bloom.

Some of those that have been quite satisfactory in the Denver area are:

Climbing Aloha—hybrid tea — very double large flowers of salmon pink; gives continuous bloom after being established two or three years.

Climbing Crimson Glory — hybrid tea — large double dark red blooms, sometimes with weak necks as the flowers are very heavy. Establishes in about two years.

Climbing Summer Snow — floribunda — large clusters of semi-double white flowers July to October.

Dr. J. H. Nichols — large flowered pink climber. A fine producer from the first year on but a very slow grower.

King Midas — large flowered climber — yellow — with six weeks of intermittent color from early June.

Frau Karl Druschki — climbing hybrid perpetual. Snow white blooms in early June and some Autumn rebloom. Does best when trained sideways rather than vertically.

Climbing New Dawn—large flowered blue pink repeater. Will grow up to twenty feet.

Unfortunately it is difficult to secure some of these more unusual climbing varieties from local nurserymen.

Pruning is not too difficult, but nearly attention is required to keep the plants in bounds. Timing is always the same—and so are the thorns to scratch you. In early Spring remove any winterkilled or diseased wood. Then prune right after bloom to encourage the next crop on repeaters or to help train and keep a plant in bounds. Prune any time for some growth that is too rampant for the location or purpose. Suckers, that is growth arising from the root stock and below the bud or knob of the union, should be promptly removed. Usually sucker growth has foliage noticeably different in color, shininess or texture, but seven leaflets are not a *certain* indication of a sucker. Climbers trained horizontally on a fence will give more bloom than if allowed to grow upright as they put out more laterals along the stem. On those climbers that require several years to produce good flowering framework prune lightly at first and cut first flowers with very short stems. Train rather than cut a young plant. Some varieties produce only a few big basal canes from which arise many flower-

ing laterals. These require only a little cutting out of crowded canes or very old ones that have ceased to bloom well. On once-flowering large bloomed climbers cut back the flowering stem after blooming to two or three leaf buds. On the large flowering repeaters, remove the end of each flowering lateral after blooming, but leave three or four leaf buds. On very vigorous varieties cut back new basal canes one-third to one-half at the end of the growing season to encourage more blooming laterals next year. Actually one probably will have to work out his own pruning depending on the growth and space allotted to the rose. Blaze and Paul's Scarlet require less pruning than American Beauty and Silver Moon.

Climbers can be trained on a brick wall without defacing the brick by using the "Wayward Vine Supports" which are pliable wires fastened to a cement base which is glued on to the brick. These can be obtained at seed stores, at a cost of about five cents each.

With the arrival of spring's warm temperatures this little gray, black and white bird is trim and slender. Cold winter temperatures make Mr. Chickadee fluff out his feathers and appear quite plump. Most of us know his easily identified, "chick-a-dee-dee". Now, listen for his spring song. It includes a two-noted "fee-bee" or often three-noted "fee-bee-ee". A favorite nesting place is a small cavity in an old cottonwood. Those of us who have winter feeding trays or stations know what a favorite sunflower seeds are of this bird. We were inquiring of Mr. Donald Thatcher, of the Colorado Bird Club, what becomes of "our" chickadees during the summer. He suggests we keep sunflower seed out the year 'round to insure these gay, active little birds in our gardens. Perhaps it would be good to plant some sun flowers. The chickadees are great acrobats, peering under the leaves, swinging head down on a limb. They are never still.

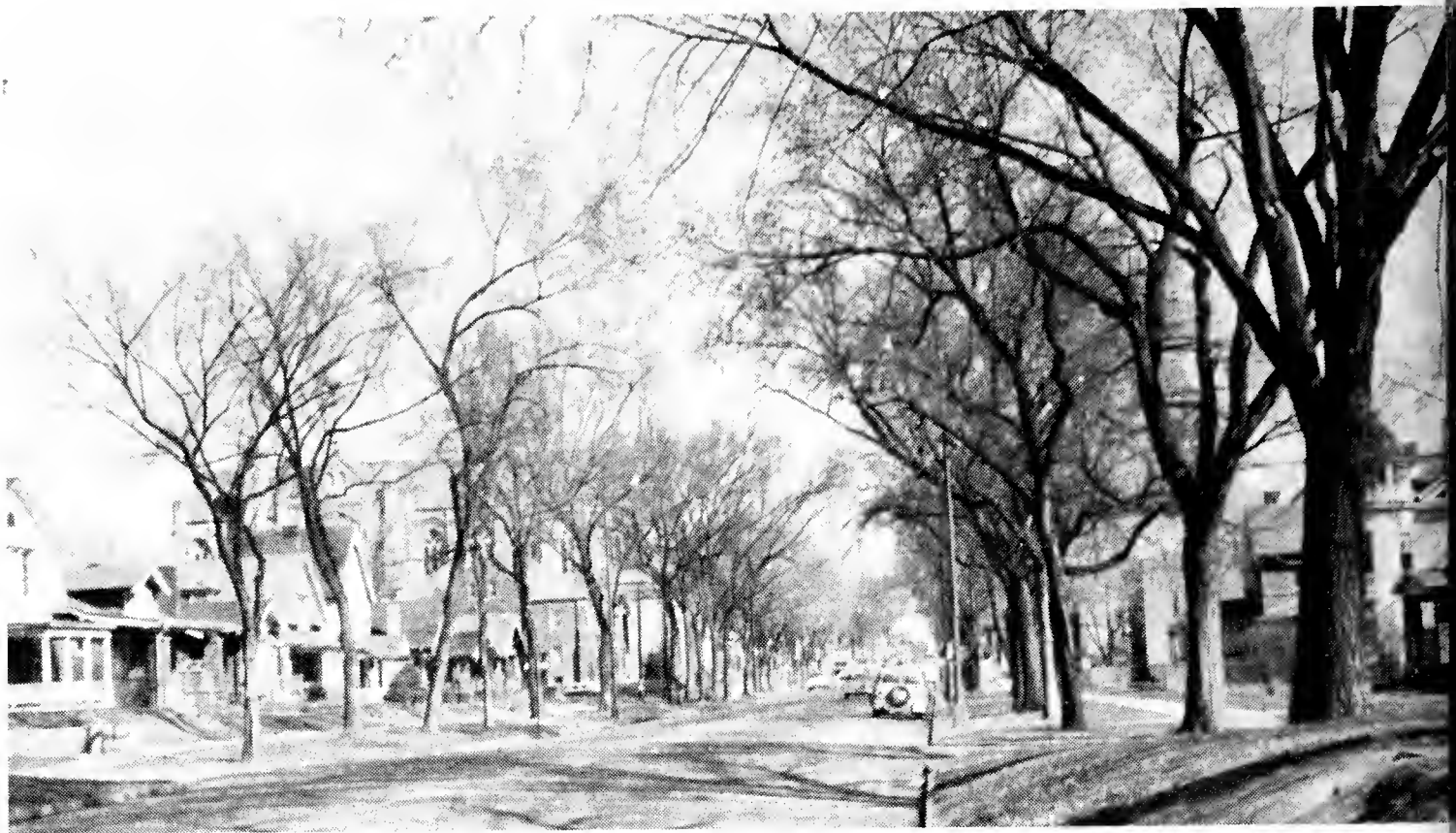
Pauline Roberts Steele

MARSHALL NURSERIES

Better Built Trees — Landscaping with Personality

5825 W. 16th Avenue

BEI mont 7-0445



Federal Boulevard before the removal of the trees for street widening.

RENAISSANCE OF TREE PLANTING

By KATHARINE B. CRISP

DISPARAGING remarks are sometimes heard about the trees in the older sections of our city. The trees are disrupting the sidewalks, or are dying of disease (due to neglect in care). Utility companies are having heavy expenditures for line clearance work and for repair to power lines damaged by wind shorn branches and storm felled trees. The line clearance work always destroys the shape of the tree. In other words, these trees reaching their prime are interfering with the ways of modern living. A change in the style of tree planting may be necessary.

The trees, cottonwoods, boxelders, soft maples, elms were planted because they were easily grown and tolerant of the less than ideal conditions of growth. They grew rapidly and in a few years their large heads of foliage produced the much desired shade. The leaves acted as filters of dust caused by traffic on unpaved streets and sidewalk paths. During warm weather the transpiration of moisture from the leaves

had a cooling effect. The shade cast by their canopies reduced the temperature in homes and some forms made effective wind breaks. Trees also acted as barriers against noise.

In this modern era pavements have somewhat reduced the amount of dust but not the noise. Air conditioning in homes can replace the cool shade. Since walking is becoming negligible, sidewalks are disappearing. Trees, however, are still beautiful and desirable and necessary for pleasant living.

These "inherited" trees desirable in the past are now too costly to maintain. Overgrown and too closely spaced, they are becoming an expensive nuisance on many of the city streets. As utility installations keep pace with the rapid advance toward modern living, there is the constant conflict of the large trees with the power lines. Naked wood poles supporting canopies of interlacing power lines continue to increase in number.

To solve this problem in the newer residential sections of the city the use



Trees are a necessity for the comfort and beauty of the modern home. Photo courtesy American Association of Nurserymen.

smaller-maturing species are recommended. By planting small trees with stigate and columnar form, some of the difficulties mentioned can be overcome. Outstanding among the improved forms are Norway maple, *Acer glabrum* Cl. (*erectum*); American linden, *Tilia americana* (*fastigiata*); American elm, *Ulmus americana ascendens*; mountain ash, *Sorbus alnifolia*, and little leaf linden, *Tilia cordata*.

Other satisfactory street trees are hackberry, *Celtis occidentalis*; green ash, *Fraxinus pennsylvanica lanceolata*; thornless honey locust, *Gleditsia inermis*; Kentucky coffee tree, *Gymnocladus dioica*, and sycamore, *Platanus acerifolia*.

A practical and comprehensive street-tree program based on the experience of almost a century should be formulated and maintained consistent with the development of modern residential areas. A wider choice of trees is now available both functional and ornamental. With special care in planting, watering, fertilizing and trimming these more desirable trees can be made to grow.

Trees in the parking wherever it exists should be for the effect on the street, uniform in species and size for each block. Since these trees are grown on city property and since the tree authorities are familiar with the conditions to which the trees will be subjected, they should be planted and maintained by the city.

Certain trees that are familiar to those who have lived in other parts of the United States do not grow easily in this semi-arid region. But we have a sufficient number that have proved hardy from which to select. Hardiness and beauty at all seasons are important considerations in selecting trees for city conditions.

Shade trees may be planted singly or in groups to furnish shade or as a background. Those furnishing heavy shade are Norway maple, American linden, little leaf linden and sycamore.

Little leaf linden, *Tilia cordata*, 30-50 feet, smallest leaved of the lindens with a strictly tailored appearance, valued for neatness and symmetry. Heart shaped leaves of rich dark green, densely arranged, furnish perfect shade. In autumn they are of a clear golden

yellow coloring. Inconspicuous but very sweet scented flowers appear in the latter part of June. Not a fast grower, its ability to withstand adverse city conditions as well as extreme cold make it a very usable tree. A fine specimen stands near the northeast corner of the Capitol Building. Another one is growing west of the old library building on the Civic Center.

Sycamore, buttonwood, plane tree, *Platanus acerifolia*, 50 feet or more, a stately tree with tall trunk and loose, broad head and mottled green and white limbs. The tree sheds its bark in sheets from the smaller branches, exposing pale, smooth under bark. It is recognizable by its mottled appearance in winter and in summer. Leaves are large, palmately lobed turning yellow to brown in autumn and papery. The name buttonwood comes from the fruits which are swinging, many-seeded balls, hanging all winter. Sycamores are growing on each side of Crony Lane in City Park south of the museum, also on the Marion Street parkway.

Two trees furnishing light shade are the honey locust and the larch. The Moraine locust is a variety of honey

locust that is thornless and podless. Ideal for street planting, for accent for stately effect. The feathery compound leaves admit filtered sunlight permitting maintenance of a lawn in its shade. Flat topped contour harmonizes well with contemporary architecture.

The larch or tamarack, *Larix* spp. 50 feet. Tall pyramidal tree. Bears small cones with concave, plain scales. Needle-like leaves are deciduous. Well developed trees may be seen on 7th Avenue Parkway.

Two hardy trees are Ailanthus and green ash. Tree of heaven, *Ailanthus altissima*, 50 feet, a luxuriant tree with long compound leaves resembling the sumac. Only pistillate types should be planted as the staminate flowers exude a disagreeable odor. Short lived tree but replaces itself readily. Well adapted to city planting. A fruiting tree in late summer, looks like a green hydrangea.

Green ash, *Fraxinus pennsylvanica lanceolata*, 60 feet or more, handsome round topped tree, compound leaves. Seeds winged and shaped like dart borne profusely. Withstands drought and is tolerant of climatic extremes.

Port-a-planters were introduced this year by the makers of Jack Pot peat moss pots for the gardener who starts his own seeds and seedlings. These attractive polystyrene trays are designed to hold 12 1¾ inch Jack Pots. The planter is sturdy, light weight, and comes in 2 styles, with or without an attached drainage saucer. Their design insures good drainage and facilitates removal of pots from tray without damage to plant or pot.

OPEN SOON

A BRAND NEW ALL ROUND NEW GARDEN CENTER

CREATIVE GARDENS

55th and Wadsworth Bypass

Arvada

THE WILDERNESS BILL

DURING the last few years the so-called Wilderness Bill, now before Congress, has been given wide publicity. Many viewpoints have been expressed in the Press and elsewhere both for and against this measure. It has been stated that if this bill is passed the development of the country, particularly the West, would be choked. On the other hand, according to some, without the Wilderness Bill there soon would be no areas in the country that had not been invaded for commercial purposes. Such exaggerated statements point to a need to examine closely what this bill is designed to accomplish.

At the present time we still have large natural wild areas in the United States. Many of these areas are federally owned and are included in parks, forests, refuges or other kinds of reservations. Some 48 national parks or monuments have areas large enough to be called wilderness. Some 80 areas within the national forests have been designated by the Forest Service as wild or primitive areas. In all, there are about 163 areas of wilderness in Federal ownership. Colorado has 11 such areas in the national forests embracing a half a million acres.

To date there are no laws of Congress which protect these areas of wilderness. Even in the national parks pressure for roads and tourist developments threaten to destroy them. The Forest Service and Department of Agriculture deserve the thanks of wilderness enthusiasts for their establishment and maintenance of wilderness areas in the national forests. But it should be realized that such areas could be abolished or reduced by a future Secretary of Agriculture. There is con-

stant pressure on the Forest Service to open areas, now roadless and in primitive condition for commercial exploitation of one form or another. For example, if a contract was given to cut the beetle-killed trees in the Flat Tops region of Colorado, it would be very difficult to avoid destruction of parts of the fine Flat Tops primitive area.

Decisions involving the fate of these primitive areas should be made by the people of the United States, through their representatives in Congress and such is the purpose of the Wilderness Bill. As Senator Humphrey, who introduced the original Wilderness Bill into the Senate in 1956, says, "The Wilderness Bill, in brief, is a measure designed to make sure that parts of America may remain unspoiled in their own natural way, untrampled by man and unmarred by machinery."

The Wilderness Bill would protect the areas designed as wilderness from adverse administrative decisions which at present can be made without widespread public knowledge. Under the bill, it is required that Congress be notified of any proposed change in the status of a wilderness area by the officials having jurisdiction over the lands involved.

Thus, a national wilderness preservation system would be established. Here for the first time in the history of this country, the preservation of natural primitive areas for the enjoyment of present and future generations is proposed as an enduring policy of Congress. The Wilderness Bill should receive the support of all who desire that some parts of America be left in their natural condition.

—F. A. CAJORI

Carry a litterbag for travel-trash . . . and help keep our roadsides clean.
A cleaner America is up to you.



Mr. and Mrs. Robert Ewalt sit under an arbor surrounded by prize winning phlox in their beautiful garden.

HAS PHLOX LOST POPULARITY?

BY M. WALTER PESMAN

THERE is a very choice garden in the Park Hill region of Denver that depends on three perennials mostly, for continuous bloom. They are iris, phlox and chrysanthemum. The garden is attractive whenever you see it. It belongs to Mr. and Mrs. Robert Ewalt and is located at 2354 Elm Street.

Personally I can't see how anybody could design a good colorful garden without perennial phlox. And yet,—a charming lady asked me in all good faith: "Don't you think phlox is a bit out of style now?"

Well, changing styles without any better reason than change, always did bring out the worst side in my nature. To have it happen to phlox,—if it has? —that would be a calamity,

wouldn't it now? We must not let it happen!

Let us begin with early spring. Think of doing without the brilliant pinkish-red ground cover of *Phlox subulata*, "Vivid" the stand-by variety. Subulata means awl-like: it refers to the pretty, moss-like foliage, almost evergreen. Give it full sun and it will cheer you every April and May. Moss Pink is the common name.

There are some newer varieties, such as Admiration and Alexander's Surprise; there are even blue and white kinds.

However, in blues and whites you may prefer the slightly taller *Phlox divaricata*, *P. divaricata laphami*, and *Phlox ovata* (red). They are all good.

and quite hardy, again blooming in May.

Annual Phlox grows up to over a foot tall, *Phlox drummondii*; it is a native of Texas, with all the Texas hardiness. I always think of it as one of the three "dependables": petunia, verbenas, annual phlox. Any flower border is enriched by masses of its white, pink, red or lavender trusses. Full sun is best.

All this is introduction to the *Hardy Garden Phlox*, that we depend on in the Perennial or Mixed Border in midsummer. *Phlox paniculata* is the botanical name that indicates the parent plant. By this time it has been crossed and improved, so that many varieties are really hybrids. A group name of these halfbreeds and mixed-breeds are often put together under the name *Phlox decussata*.

Most of us are less interested in this breeding process, fascinating as the details are. What we want to know is what the best varieties are, and what colors we can get.

Let us begin with the whites. After all, this color helps us out of such difficult combinations, as scarlet with crimson-red for instance. Separate the offenders by a long drift of white phlox and they'll stop swearing at each other. It always works!

An old-timer that is still very good is a product from D. M. Andrews, our grand pioneer horticulturist in Boulder. Among the many mementoes he left us is *Snowcap*, a free-bloomer, not too tall, always dependable. It may find a competitor in the future in a production from Germany, called *Snowball*, with large trusses and pure white bloom. *White Admiral* is particularly good because it keeps coming through July and August, from side branches.

An early bloomer, on the other hand, is *Miss Lingard*, really a different species (*Phlox suffruticosa*). It starts in June.

Old timers in white, still good and still available, are *Mrs. Jenkins*, *Mary Louise*, *Mia Ruys*. *World Peace* is large, pure white; *Mother of Pearl* has a bluish tint as the name indicates. Then there are whites with crimson eye, *Prime Minister* and *Count Zepelin*. For bold effects solid colors are best.

Pink phloxes are always effective, and not too difficult to harmonize. *Columbia*, a few years ago, made headlines in flower catalogs; it is still an excellent pink. Oldtimers are *Rynstroom*, *Elizabeth Arden*, *Jules Sandeau*, all good. In spite of its name *Mrs. Milly van Hoboken* is still a favorite.

Dresden China, *Border Queen*, *Lilian* and *Miss Verboom* are described as pink or rose. *Daily Sketch* grows almost too tall at times: 3½ ft. but in a large border it furnishes a good splash of deep pink, partly due to its deeper pink eye.

A number of phlox that used to be called pink are now described as salmon or salmon pink. *Sir John Falstaff* leads them all: large flower trusses, robust, vigorous with sturdy stems; we all fell for Sir John when he was first introduced a few years ago.

In the salmons don't forget *Elizabeth Campbell*, *Rheinlander*, *Enchantress*, *Spitfire* *Harvest Fire* and *Glamour* the 1960 all-America winner. The reason we are giving so many of them is that different nurseries might carry different varieties, and there is not too much choice between them I feel.

The next two groups are usually lumped as "red", and yet they may not harmonize too well. On the one hand are the crimson or blood-reds, such as *Lea Schlageter*, *Charles Curtis*, *Africa*, *Hauptman Kohl* (3-ft), *Von Hochberg*, and *Augusta*.

Leaning toward the orange and scarlet are the two princes: *Prince of Orange* and *Prince George*. *Feuerbrand* and *Flash* belong in this scarlet

group. *Tenor* is "rose red with scarlet" and is particularly good because it is apt to bloom twice, early and late.

And here are the blues and lilacs:

BLUE	LILAC
BLUE BOY	LILAC TIME
CAROLINE VANDENBURG	LAVENDER BEAUTY
COLONIAL PROGRESS	LAVENDER CLOUD

Together with the whites they are handy to separate the recalcitrant reds, that are apt to quarrel in their color combinations. In your planning use them as fillers for that purpose.

Well, there we are. It is a big list and may be somewhat confusing to a beginner. The fact is that any of the varieties mentioned are sure to give pleasure if planted in masses (or drifts, as we prefer: long and narrow strips).

Troubles? Yes, there are some in this climate. The main advice we can give is to "keep them clean." That means, particularly, clean from red spider and mildew, our dry-weather troubles.

For red spider malathion and isotox are indicated; be sure to spray upward from below,—that is where the red spiders love to hide; underneath

the leaves. Even an occasional washing from below with the hose might do some good.

Mildew control means sulphur in any form: dust, spray, or in combination with other sprays. It is apt to show up later in the season, when we have lost interest and when we might have become careless.

Here are a few hints from a recent catalog. Plant phlox in full sun if possible, setting plants ten inches apart. Divide every third year to keep big flowers. Never let plants go to seed. never water overhead, always keep blooms and foliage dry, letting hoses run slowly on the ground.

Oh yes, I almost forgot. Has your border been neglected so that the only phlox left is the "poor relative" sickly purple? It often has happened "the poor we always have with us." In this case charity is not a virtue. Boil them hard-boiled and throw them away, so that the better new varieties will have a chance.

Come to think of it, that is not a bad bit of general advice for all those seedy perennials in the border, is it? All it takes is being "hard-boiled" about weedy, seedy things!

Lawns, roses, trees, shrubs, and other garden plants need extra feeding this Spring.

The severe winter, with heavy snow and below-normal temperatures, has left most plants in poor condition to start their normal Spring growth. Soil has been water-logged . . . many of the nutrients have been washed away by surface run-off or have leached down into the subsoil.

These conditions are now wide-spread at the very time when plants need an abundance of food if they are to achieve normal, vigorous growth. When trees and plants first leaf out, growing new foliage, fruits, and flowers, a constant supply of food is essential for best results.

According to Thos. P. Reilly, RA-PID-GRO Corporation, one of the most effective methods of applying the necessary food to plants is by foliar feeding. Science has proven that plants will absorb soluble nutrients, not only through the leaves but also through blooms, branches, stems, as well as the roots. A fine mist spray of high-quality liquid plant food, applied every week to ten days, will give the plants the help they need to overcome the ravages of winter.

WORLD'S LARGEST FLOWER SHOW

MARCH 25 TO SEPT. 25

M. WALTER PESMAN

AFTER seeing Denver's exciting Garden Show in April (you did, didn't you?), — imagine a horticultural exhibit that covers almost one hundred acres and that lasts six months!

This is the first time that the United States has gone into international competition to show its horticultural achievements, the first time the American Horticultural Society is participating outside the country, namely in Holland, (Rotterdam).

The American exhibit overlooks the entire Floriade (that is what the Show is called) on one side and the wide, peaceful Maas river on the other side.

Instead of our tall fountain the feature is a 416-foot tower, called the Euromast; it contains three restaurants, the top one being "The Crow's Nest". You can see from it the exhibition grounds, Rotterdam, and the countryside around.

An eighteenth century mansion, furnished with genuine antiques, invites you for a visit, for a stroll around its vast formal gardens and for a boatride on its lake.

The garden of Clusius, famed 16th century botanist of Holland, is reproduced according to the original, with high brick wall, narrow flagstone paths, and rare plants and herbs.

Laboratories showing the details of

research in horticulture are shown in full operation. The miracle of sunlight is exhibited.

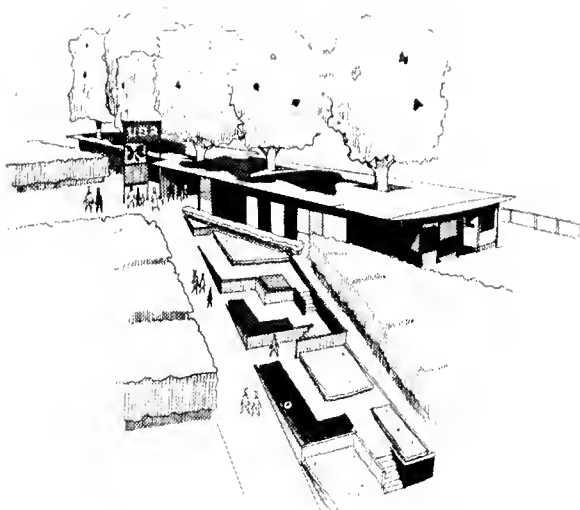
Suppose you want to bid on a bouquet or a plant to take home: you sit down in the auction hall with a push-button in front of you. In the middle a large clock shows a hand going around, pointing to a series of prices. As soon as it reaches the price you want to pay, you push the electric button, your number flashes on the board and you have become the owner. Not a word is spoken in this Aalsmeer auction.

As the season progresses there will be special displays of flowers as they come into their own: daffodils, roses, rhododendrons, gladioli, dahlias, chrysanthemums.

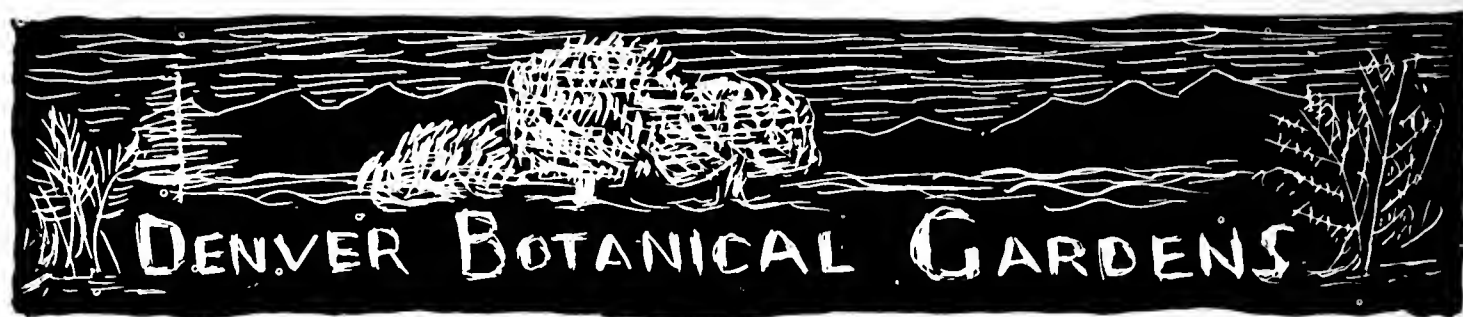
Wild flowers from all over the world have been collected and are grouped by continent. A replica of Sir Winston Churchill's famous rose garden is another feature.

By this time you may be as eager to fly to the Floriade and to Holland as I am.

Floriade, the Olympiad of international flowers, will feature All-America Selections of flowers and vegetables, the 1960 Rocket series of huge, fat snapdragons, the new three-inch marigold *Spun Gold*, the new salmon pink phlox *Glamour*, twenty new glamorous petunias, masses of All-American mums.



Entrance to U. S. Exhibit at the Rotterdam Floriade. Photo courtesy American Horticultural Society.



Landscape Architects Give Plans To Denver Botanic Gardens

THE Denver Botanic Gardens have received an unusual and much appreciated gift. Last fall the Rocky Mountain Chapter of the American Society of Landscape Architects graciously offered their services in designing the landscape plantings for the Herbaceous Unit on York Street.

This national society is an old organization, founded in 1899. However, the Rocky Mountain Chapter, which embraces Colorado, New Mexico, Utah and Wyoming, was installed only last year. This Chapter superseded a local group known as the Rocky Mountain Association of Landscape Architects, organized three years earlier.

Five prominent Denver members of the Rocky Mountain Chapter pooled their talents and donated their time in designing these plantings. They are Miss Julia Jane Silverstein, President of the Chapter, Mr. Gerald F. Kessler, Secretary-Treasurer, Mr. Andrew Larson, Mrs. Frances White Novitt, and Mr. M. Walter Pesman. For the final drafting of the planting plans the services of Mr. Ed Wallace and Mrs. Frances White Novitt were employed.

The plans have now been completed and accepted by the executive Committee of the Denver Botanic Gardens. Planting is already in progress. It probably will be two or more years before the work is completed, as some of the plant species specified in the plans are not common in the American nursery trade, and may have to be propagated or imported.

Plant materials included in these designs are mostly woody species — trees, shrubs, vines and ground covers. One section of the planting is devoted to European plants, another to native American plants and still another to mixed European, Asiatic and American species. Plants native to the Western Great Plains and the Rocky Mountains are liberally used, especially those that can be grown with little or no irrigation.

These plantings will provide the proper landscape setting for the herbaceous materials—the annuals and perennials, which are to be the chief feature of this unit of the Gardens. Of course, the main collections of trees and large shrubs will continue to be maintained and developed in the arboretum part of the Denver Botanic Gardens. This is the 100-acre tract on the east side of City Park.

To these landscape architects who have so generously given of their time to this project, the Denver Botanic Gardens extend our sincerest thanks. Their work will stand as a splendid example of landscape architecture designed for human use and enjoyment. It is hoped that it will encourage people in our Plains-Rocky Mountain area to make greater use of professional landscape architects' services. This would be a most important step toward making our part of the country a more beautiful and more desirable place in which to live.

—DR. A. C. HILDRETH



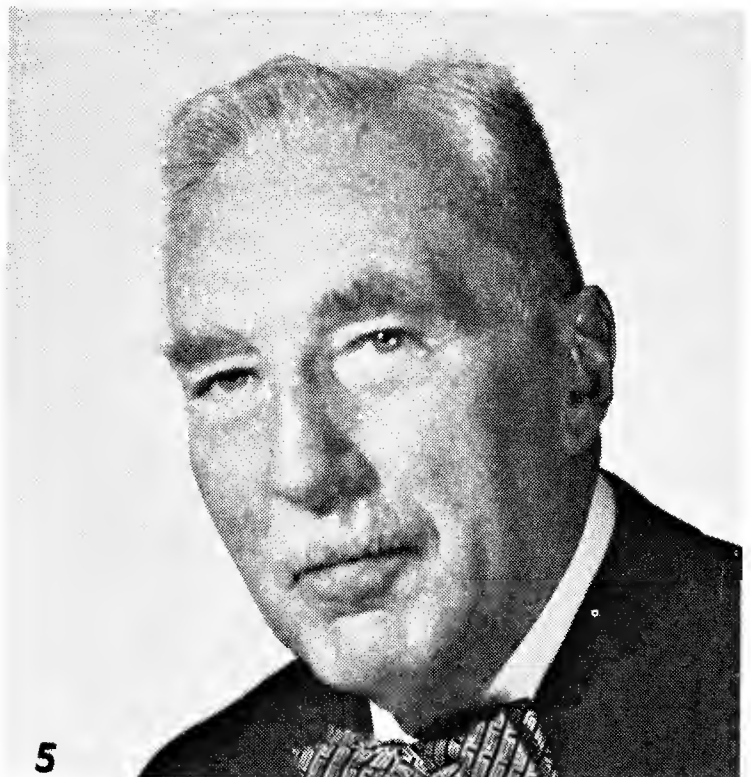
1. Miss Julia Jane Silverstein

2. Gerald F. Kessler

3. Andrew Larson

4. Mrs. Frances White Novitt

5. M. Walter Pesman



Gardening With Colorado Wildings II

BY RUTH ASHTON NELSON

Native Rock Garden Plants

OUR Colorado mountains offer numerous examples of natural rock gardens. One has only to explore the foothill slopes, the deep shaded canyons or the fell fields at timberline to find beautiful combinations of plants with rocks. Each type of habitat has its own assortment of residents and there are very few species of plants which are happy in all situations. Two exceptions which are practically ubiquitous are stonecrop and harebell. They are found from the foothills to the high peaks. They are easy to transplant and will thrive in dry, gravelly soil.

On limestone or shale-chip covered slopes at the edge of the foothills we find several species in the Sunflower Family. Easter Daisies (*Townsendia*) and *Erigerons*, of the early flowering, tufted, short-stemmed type with white or lavender blossoms, will do well transplanted to dry corners.

Actinias (now called by the botanists *Hymenoxys*) compact, silvery plants with golden daisy-like heads are lovely in a sunny rockery. Also several of the *Eriogonums* which include the Golden Buckwheat and Sulphur Flower are good. Some of these are quite dwarf and make nearly evergreen mats. There are other kinds which you can find if you explore these areas and a still greater variety on the gravelly sides of many dry foothills.

In the canyons we find mosses, ferns and delicate shade-lovers such as some of the saxifrages and columbines. At high altitudes are the choicest gems of neat compact miniatures, Fairy Primrose, Alpine Columbine, Mertensias and Kings Crown. When these high alpine plants are brought to the garden they should be given cool, shaded spots, if possible where the

ground will stay frozen and snow covered all winter. In my Colorado Spring garden Fairy Primrose has persisted for seven years planted on the north of the house where it blooms regularly in April.

It is worth while to experiment with any which appeal to you, always bearing in mind a fundamental principle of conservation which is to dig only where there will be an adequate supply left and only when you are reasonably sure that you can be successful in growing the plants which you collect.

In the following paragraphs I will describe briefly a few species which I have found very desirable and easy to work with. One secret of success with Rocky Mountain native plants is to give them slightly more moisture than they would receive in their normal habitats but much less than we ordinarily give our lawns and gardens. This makes it difficult to combine them with cultivated varieties. It also makes them valuable for those hard to water spots. I believe that the Penstemons are the best of the wildings for use under ordinary garden conditions.

For the rock garden, I put first of all, the creeping penstemons, *P. crandallii*, *P. teucroides*, and *P. linerioides*. *coloradensis* with its various forms. These are low growing, spreading, and almost evergreen. They will fill the crevices between rocks, trail over banks, bloom freely for two or three weeks in May or early June, and remain neat the year around. The first two are real creepers with flowers along their stems. Crandall's Penstemon has some good true blue forms with bright green foliage; "teucroides" has gray foliage with flowers tending towards lavender; "coloradensis" spreads, has narrow reddish green



Wooly Actinella, *Hymenoxys lanata*.



Blackfoot, *Melampodium*.

leaves and is very floriferous with short, erect racemes of blue or lavender blossoms. It seeds and germinates freely in the garden. All three occasionally have pink forms and white ones are to be expected. They all are frequently found growing among sagebrush or other shrubs.

Another very desirable species is the low growing *P. virens*, sometimes called "Dwarf Penstemon". This is the one which covers hillsides with a sheet of misty blue in May or June in the Castle Rock area, in Ute Pass along Highway 24, and in many other regions. It forms perennial clumps with erect flower stems 6 to 10 inches tall. At close range the blossoms are really blue. Its leaves are shiny and almost evergreen. To keep it happy it should be divided and replanted every third year. *Penstemon laricifolius* var. *exilifolius* with somewhat similar growth habit to *P. virens* but smaller and daintier throughout with very narrow leaves and creamy white flowers is abundant on the Laramie plains. I have had it blooming in the garden for several years but have not yet propagated it successfully. Most species of Penstemon are very easy to transplant and easily increased in the garden by division when growth starts in the spring.

Besides the penstemons there are a few other "tried and true" rock garden subjects. Double bladderpod (*Physaria*) is one of the best. It makes perennially handsome compact rosettes of silvery foliage and in May adds dainty yellow blossoms followed by interesting, inflated seed pods. Its close relative, the single bladderpod (*Lesquerella*) is almost equally attractive in its early rosette stage but becomes stringy after flowering. Several species of low growing Phlox are worth having. The easiest to transplant is *P. glabrata*, a very low moss-like cushion with small white flowers. There are other handsomer and more difficult ones.

Among the sunflower relatives, besides those mentioned earlier, are two which I find very satisfactory. Kathleen Marriage recommended both of these years ago. First is "blackfoot" (*Melampodium*), a white-flowered branching plant eight to ten inches tall with the habit of falling gracefully over the rocks around it, which blooms continuously from May to October. *Crasina* (a native Zinnia) is similar with bright yellow blooms. These plants are found on the high plains and along the foothills of southern Colorado.

There are several members of the

Evening Primrose family which are desirable, particularly *Galpinsia* (*Oenothera lavendulafolia*) with its squarish pale yellow blossoms and *Meriolyx* (*O. serrata*) a bushy plant with numerous, four-petaled bright yellow blooms. The fragrant stemless primrose with large white flowers is charming but can only be kept under control by strict rationing of water.

I like to give all my wildings plenty

of sand and peat moss when I transplant them and keep them moist and shaded until they show signs of new life, and I always try to find small individuals for transplanting. Because their root systems are small they suffer less damage in moving and so have a better chance for survival. By close observation of rock-loving wild plants we can all improve our home rock gardens.

Did you ever wonder how long seeds may be stored without losing the ability to germinate? The life span of seeds has interested man for many years. There is something about a seed that, no matter where it is found nor in how good or poor condition it looks, the question, "Will it grow?" almost always arises.

In the spring of 1959 the members of the First Unitarian Society in Denver, Colorado, had occasion to ask the question, "Will it grow?" The First Unitarian Church at 19th and Broadway was razed to make way for a new structure. Upon opening the cornerstone, which had been laid November 7, 1886, the Society found among the papers 3 pharmacists' bottles containing seed samples of corn, wheat, and oats. "Will they grow?" the members asked, and plans were made to answer the question. The Seed Laboratory at Colorado State University, Fort Collins, Colorado, was contacted, and samples of the seeds were sent for testing.

Bruce J. Thornton, director of the Seed Laboratory, reported the results of the tests, "As we had anticipated, none of the seeds showed any viability. Longevity tests previously conducted by the Seed Laboratory served as a basis for the anticipated results. Under storage conditions tested by the Laboratory corn and wheat show little viability after 20 years, oats and barley little after 30 years. They have had alfalfa seed which showed 50% viability after 60 years of storage. Mr. Thornton also stated that the seed samples indicated that apparently barley and alfalfa were not popular crops in 1886, as they were not included in the stored seeds.

In addition to the viability tests, portions of the stored seeds were given to the United States Department of Health, Education and Welfare. These seeds will be tested for radio activity and the results used in establishing an index for radio activity in 1886.

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PLAIN PLANTS AREN'T TOO PLAIN!

BY MORAS L. SHUBERT

Photos courtesy of Robert Niedrach and
M. Walter Pesman



Prickly Poppy, *Argemone intermedia*.

WE mountain states people are proud of our mountains. We love them so much that we continually turn to them for camping, hiking, fishing, hunting, picnicking—or just plain sight-seeing. Most of us have failed to give the plains regions a chance to prove how beautiful and fascinating they can be. Several years ago a resident of Deer Trail, Colorado, told me that he loved the treeless plains and did not care about ever seeing another mountain! What blasphemy is this?

Although I could not agree with this man, I could understand his point, because there is something so completely relaxing about being out on a hill in the grasslands where the only sounds are the gentle rustle of grasses in the breeze, the hum of bees, the tinkle of grasshopper wings, and the colorful repertoire of the meadowlarks and other plains birds. Eyes, tired from the close work of daily tasks, are rested and repaired by the view of an immense sky dome covering the multi-colored landscape—so much more colorful than we realize when we hasten past it at 70 miles an hour, trying to “make time” in this countryside we thought to be so monotonous.

To properly appreciate the quietness of the plains, one should go alone

or with only a very small party to an isolated spot far from the nearest highway. Preferably the visit should be in the early morning or during the last three hours before sunset. This June should be an ideal month, unless there is a drastic change in the weather pattern from that earlier this year. Most of our plains areas have had a rather severe winter and good moisture supply. These conditions prepare the soil and plants for a spectacular show in June.

Now what plants should we look for in June? Grasses? You may say, “Why would anyone waste time looking at grasses?” Won’t you, please, take a close look at a few kinds of grass plants when they are in their June bloom to discover the perfect order of their flower clusters? Admittedly the individual flowers are tiny and not very colorful, but examine a wheat grass head, a needly grass, and a grama grass, and your efforts will be rewarded. The grasses are the dominant plants of this landscape, but interspersed among them are the showy flowers represented by many families of plants. The fragrant peavine, spires of waxy yucca flowers, and the dainty fleabane daisies are examples of the natural flower garden we will find.

Since it is fun to learn the names of the flowers that we enjoy, a copy of M. Walter Pesman's "*Meet the Natives*" should be taken along. The pages describing the species prominent to the plains region have margins colored to indicate the flower-color groups, so it is easy to find that a certain plant with slender stems and blue flowers nodding in the breeze is a flax plant, for example.

It is not practical to try to list all of the species we might find, but the abridged list below includes many of the choice kinds to look for:

Plants whose flowers are some shade of red:

Leatherpod loco	<i>Astragalus shortianus</i>
Lambert's red loco	<i>Oxytropis lambertii</i>
Peavine (wild sweet pea)	<i>Lathyrus polymorphus</i>
Prairie clover	<i>Petalostemon purpureus</i>
Cowboy's delight	<i>Sphaeralcea coccinea</i>
Orchid beardtongue	<i>Penstemon secundiflorus</i>
Bush morning glory	<i>Ipomea leptophylla</i>
Showy four o'clock	<i>Mirabilis multiflora</i>

Plants whose flowers are white or nearly white:

Mariposa	<i>Calochortus gunnisonii</i>
False loco	<i>Sophora sericea</i>
Stout leafy loco (ill-smelling)	<i>Astragalus racemosus</i>
White larkspur	<i>Delphinium virescens</i>
White bottlebrush (western)	<i>Stanleya albescens</i>
Pungent gilia	<i>Leptodactylon pungens</i>
Plains evening primrose	<i>Oenothera albicaulis</i>
Soapweed, or Yucca	<i>Yucca glauca</i>
Prickly poppy	<i>Argemone intermedia</i>
Low daisy	<i>Erigeron pumilus</i>

Plants whose flowers are some shade of blue to bluish-purple:

Spiderwort	<i>Tradescantia occidentalis</i>
Blue-eyed grass	<i>Sisyrinchium montanum</i>
Poisonweed (larkspur)	<i>Delphinium geyeri</i>
Woolly loco	<i>Astragalus mollissimus</i>
Purple vetch (sweetpea)	<i>Lathyrus ploymorphus</i>
Rusty lupine	<i>Lupinus pusillus</i>
Silvery lupine	<i>Lupinus argenteus</i>
Flax	<i>Linum lewisii</i>
Light-blue beardtongue (Color variant of Orchid beardtongue)	<i>Penstemon secundiflorus</i>



Erigeron, Daisy.



Bush Morning Glory, Ipomaea leptophylla.

Goldenbeard	<i>Penstemon auriberbis</i>
Slender penstemon	<i>Penstemon gracilis</i>
Low penstemon	<i>Penstemon virens</i>
Chicory	<i>Cichoria intybus</i>

lants whose flowers are yellow to orange:

Prince's plume	<i>Stanleya pinnata</i>
Plains wallflower	<i>Erysimum asperum</i>
Puccon	<i>Lithospermum incisum</i>
Golden evening primrose	<i>Oenothera brachycarpa</i>
Butter-and-eggs	<i>Linaria vulgaris</i>
False dandelion	<i>Agoseris glauca</i>
Cutleaf gaillardia	<i>Gaillardia pinnatifida</i>
Goatsbeard	<i>Tragopogon pratensis</i>
Narrowleaf sunflower	<i>Helianthus petiolaris</i>
Coneflower	<i>Ratibida columnifera</i>
Hawksbeard	<i>Crepis occidentalis</i>

This abbreviated check list is meant to be just a starter. Let's each take the list and a copy of *Meet the Natives* on our June plains trip and see how many

species we can find in bloom. It will be appreciated if everyone will send in a description of their trips and copies of the lists they made.

We haven't forgotten those who sent in their lists of late-summer flowers. There was a very nice response and we are waiting until next issue to give a report on the results at a time when those flowers, and perhaps others will be in bloom again. So watch the next *Green Thumb* for more on wild flower excursions.

Remember to enjoy the flowers, photograph them, and even make a collection, if they are to be pressed and saved, but let us not harvest them and be guilty of eradicating any of the beauty of the plains.

IN OUR LIBRARY

Japanese Gardens for Today, David H. Engel. Charles E. Tuttle, 1959.

A beautifully illustrated book of Japanese garden design showing gardens of the past pictured side by side with the gardens of modern Japanese homes. It is sure to prove of great value to the professional landscape architect and to the green-thumbed home-owner, whether he is designing an entirely new garden or only seeking an illusion of spaciousness and rightness in a tiny courtyard or corner.

Here too are set forth the rule-of-thumb practices of the actual garden-makers and, for their historic interest, the esoteric principles elaborated by scholars and critics.

Gardens are for People, Thomas D. Church. Reinhold, 1955.

This attractive and interesting book well illustrates the principles in such expressions as "the integration of house and garden", "indoor-outdoor living", and "the relation of shelter to land." This the author has shown by illustrations of gardens and grounds which he has designed for many people. Included are sections on the terrace, wood decks, beach gardens, remodeling, swimming pools, and garden details such as steps, fences, paving, seats, curbs and playgrounds.

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"LIFE WITHOUT PHLOX IS AN ERROR"

By CHRIS MORITZ

Rocky Mtn. Chapter of American Society of Landscape Architects

KARL FOERSTER, a German perennial breeder, once said, "life without phlox is an error", meaning that without the full experience of plant life in its complexity people are missing an essential part of their lives.

Specialization of our age denies most people the satisfaction of completing a job from the beginning to the end. In your garden you still can have that experience which is so essential to every living being. By watching the life of plants in your garden through the seasons you find new developments every day. There plants sprout, grow, bloom, fruit and grow dormant in endless variations of form and color.

In our technical age the need for recreation in natural surroundings is great. Our cities are increasing in size. That means people are getting farther and farther away from nature. Yet they do need contact with nature to recreate their minds, to let them rest from all the confusion and nervous tension around them.

At the same time more and more leisure time is made available by shorter working hours, longer vacations and a higher standard of living in general. What are we doing with our leisure time? Do we use it wisely? There are millions of American citizens every weekend spending hours driving in heavy traffic in order to get some outdoor recreation. By the time they return to their homes they are very often just as nervous and tired as they were before from the strain of long travel. Yet these people could have had better recreation in a well-tended garden at home. The faster our population multiplies, the larger our cities grow, the greater the importance of the garden for family recreation.

Old people make up a constantly increasing percentage of our population. For these retired people, it is important to have some interest and activity other than the past memories. It should be a constructive activity so they feel they are not useless. Cultivating a garden may well prove to be the answer.

Working in a garden is very healthful for both body and mind. Most of us do not get enough exercise in our daily jobs. Gardening will provide you with sufficient exercise so the body stays fit. For people with strenuous jobs that create nervousness and that are tiresome, working outside in the garden with soil and plants is relaxing.

There is a tendency to invest increasing amounts of money in the family home. Such a big investment should be kept up and maintained carefully. One of the best ways to keep up and raise property value is by landscaping the site carefully. The investment you make in a good landscaping job, in trees, shrubs and perennials develop and grows before your eyes and will give your home pleasant surroundings and a higher value.

Cultivating a garden, helping to create something beautiful, "life with phlox" may do another important thing for us and our country: giving us and our fellow men a greater concern about conservation of natural resources. How much longer is recreation going to be possible in unspoiled nature? The countryside is being plowed up at an increasing pace. The speed at which we are destroying our scenic natural resources is growing constantly. But we do not seem to care! Instead of protecting and preserving existing natural resources we destroy them.

wherever a new subdivision is constructed, wherever a new highway is built, wherever a new industrial site is developed. How often can we watch this: first all vegetation is destroyed, then topsoil is plowed under and packed solid with big equipment, finally erosion problems arise, streams are polluted and trash accumulates. We create a sick landscape and expect peo-

ple to live in it and stay healthy. Our surroundings influence us psychologically more than we generally realize. Only in more orderly, more restful and more beautiful surroundings can better human beings develop. The big task is still ahead of us: to teach and practice better conservation methods and to make our cities and our countryside more livable.

Lifetime markers answer the need of gardeners for an attractive, permanent method of identifying plants and shrubs. The markers, made of heavy durable plastic, come in 11 sizes and add a functional interest to both indoor and outdoor gardens. A soft lead pencil is all that is needed to make notations which won't blur or disappear. The markers are guaranteed weatherproof; will not rot, curl, rust or mildew, and can be reused for many years.

Letters to the Editor—

EDITOR:

In the excellent article on "The Colorado Blue Spruce" in the April Green Thumb, Dr. Beidleman gives me credit for discovering the largest blue spruce reported in the American Forestry Association's record. Credit for this mammoth blue spruce belongs to Ranger Ben Heilman and Supervisor Theodore Krueger, both now deceased.

While on an inspection trip on the Gunnison National Forest some thirty years ago or more, Mr. Krueger told me about this tree and took me to it. It is located in back country in the western part of this Forest. We photographed the tree and later it was reported to the American Forestry Association, giving credit to Krueger and Heilman. In the meantime, I suppose, the Forest Service file copy of Krueger's report giving location, size, etc., has been lost and I have been given credit for the tree, much to my embarrassment.

So, I am writing this to set the record straight.

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COMPOSTING

BY MRS. JOHN SCOTT

Colorado Federation of Garden Clubs

JUNE marriages are thought to be lucky. Some of us, of course, consider a wedding ceremony fortunate at any time. But the general supposition is that June nuptials are a relic of ancient superstition and mythology. "Prosperity to the man and happiness to the maid when married in June" was a proverb in Rome. Jupiter's wife, Juno, was the lifetime guardian of women and also the patroness of happy weddings.

Most weddings are preceded by socials called showers. This gift gimmick came into flower in the gay nineties. Small (unbreakable?) presents for the prospective bride were placed in a Japanese parasol. The recipient was required to hold the parasol over her head, while the gifts rained from above. From this gesture showers were so called.

Floral designs usually carry out the shower theme. But for an unusual kitchen, pantry (or are these passe?) or garden shower, here's an idea submitted by Mr. Ed. F. Snipas in *The Professional Gardener*:

GARDENER:

**"Do you carrot all for me?
My heart beets for you.
With your radish hair,
And your turnip nose,
You are a peach.
If you cantalope,
Lettuce marry.
Weed make a swell pear."**

An arranger would probably use the carrots for spike material, radishes on skewers or picks for filler, and the turnips and beets in the focal area. All the foliage (weed and lettuce, too) is fine. Or combine the peaches, pears (lipstick or rouge will make these rosy) and cantaloupes for a fruitful centerpiece.

Other fruits and vegetables suitable for showers because of their symbolism: coconut, connoting endless summer; citron, signifying happiness; peach representing the heart; pomegranate for fruitfulness; and the orange known as the celestial fruit. The tomato was the love apple of yesteryears. The peony serves the romantic, too. It's a Dutch derivative, once spelled py, pie, and pij, and referred to a cloth.

And you thought matrimony was just a bouquet of flowers? It is, decoratively speaking. Ervin S. Ferry, in his book, *Symbolism in Flower Arrangement* says that sprigs were braided into bridal wreaths during the Middle Ages to bring good fortune. Among the ancient Greeks the hawthorn was the symbol of conjugal union. In Roman representations of the marriage of Cupid and Psyche, roses were strewn on the ground. Both the Greeks and the Romans celebrated weddings with verbenas. White orange blossoms have long been the emblem of purity.

But just as generation upon generation of gardeners have regarded the carnation as the flower of flowers, so the rosemary was the herb of herbs. writes Alice M. Coats in *Flowers and Their Histories*. Mrs. Coats continues "Rosemary was essential for wedding being carried or tied to the arms of both bridesmaids and groomsman; sometimes it was gilded or dipped in scented water. The bride wore a garland of it, to signify that she carried to the new home loving memories of the old. A wedding in those days (1600) would hardly seem legal without it."

Today the choice of flowers depends on the person, place and purse. Some traditional white flowers for a bridal occasion: orchids, roses, lilies-of-the-valley, gladioli, dahlias, lilacs, narcissi, tulips, peonies, Japanese iris

lies, sweet peas, snapdragons, china asters and chrysanthemums. Colorado carnations are a favorite. Then, there's gardenias and white anthuriums.

There are no pure white flowers. Gardenias and magnolias are probably the whitest. Yet, they, too, hold a trace of color, reflected in sunlight. White doesn't appear in the spectrum. Plantwise, white is the source and sum of all color.

Color is another choice, usually in the pastels, with pink (frilly, frothy, feminine) and blue (heavenly) the favorites. Green, yellow and lavender are the traditional Easter colors, which places them after the pink and blue for brides.

Some designers favor glossy foliage (particularly the Evergreens) with white blossoms, others prefer gray.

Wildflowers are another preference. Where mass (baskets for churches or halls, for instance) is needed, consider Queen Ann's Lace. Keeps very well cut before completely open. Condition overnight with stems in cool water reaching almost to flowerheads, but don't wet the blooms.

Weddings usually evolve around announcement parties, showers, luncheons, homes, churches and receptions. At many of these functions people will be standing, and floral arrangements should be made with that in mind. It is not necessary to make a large number of arrangements, but rather to make them large enough to be appreciated in a crowd and at some distance. Place them in conspicuous places. Always in the front hall, then on the mantel, a grand piano, or any focal point where they can be seen. The type

of home, whether period, contemporary or modern, should be considered, too, when making the floral designs.

There will be tables at most of these social gatherings. And the cloth will influence the flowers, be it lace, linen damask, organdy, net over a silk or satin skirt, etc. On most of these tables the arrangements will share the honors with a wedding cake, a beautiful piece of artistry itself.

It will perhaps be better if the overall table design is symmetrical. The floral piece might dominate the center of the table with a cake at one end, and perhaps the punch bowl or tea service at the other. Or if the cake is dominant, twin arrangements or arrangements in twin containers might be placed at either side, or a wreath of flowers (gardenias, for instance) could surround the cake. Or encircle such a cake with corsages or nosegays to be given to guests later.

Really, weddings are so flowery that a list of selections found in either or both the Colorado Federation of Garden Clubs, Inc., or Colorado Forestry and Horticulture's libraries should help. For flowers for personal adornment there's *Styling Corsages with Garden Flowers*, Drummond; *Make Your Own Corsage*, Aldridge; *Corsage Craft*, Noble & Reusch; and others. *Flower Arrangements for Churches*, Wilson; *Themes in Flower Arrangement*, Mullins; *Arranging Church Flowers*, Jones; might give some altar aids. *Book of Table Arrangements*, Roberts; *Flowers & Table Setting* and *Flowers in Glass*, both by Berrall; *Setting Your Table*, Sprackling; *The Complete Book of*

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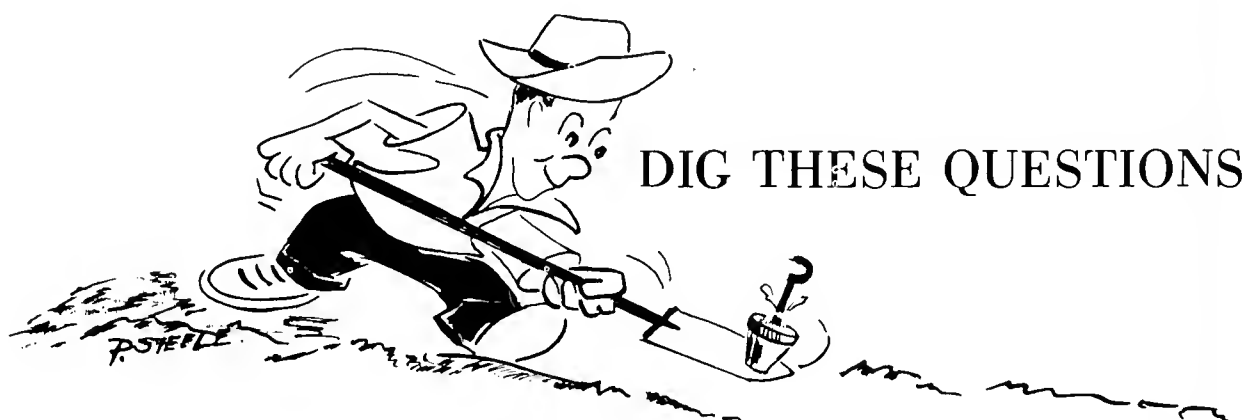
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June weddings share the spotlight with flower shows. And your *Green Thumb* would like to attend the latter in a variety of classes that could be worked out with any Flower Show committee. At the Arapahoe County Fair Association Show, June 17, put on by the Sunshine Seeders Federated Garden Club, the theme is Suburban

Solariums. The Artistic Division features rooms of a house and Class 60 called Magazine Marvels or a library using a 1960 issue or issues of *Green Thumb* somewhere in the design—basically accessory, container, etc. Winner receive an added special prize of year's subscription to *Green Thumb* courtesy, Colorado Forestry and Horticulture Association. For further information on having the *Green Thumb* at your show, consult Pat Gallavan 909 York St., Denver.



Question: Is there any harm in cutting the tops off tulips after they are through blooming?

Answer: The tops of tulips should not be cut off until they have turned yellow. As long as they are green and healthy, they are making food for the plant which will strengthen the bulb and insure good bloom the following year. Cutting off the green tops weakens the bulbs and results in loss of bloom. If the leaves are unattractive, they may often be tucked back of another plant, but they should not be cut off until they have yellowed.

Question: Can magnolias be grown in Denver?

Answer: Yes — with reservations. The species *Magnolia soulangeana* can be found growing in good condition in Denver in sheltered spots. However, one cannot count on having flowers every year. Magnolias need protection, and since they bloom very early, they are apt to be frosted. If you have a protected location and are willing to

put up with the disappointment of bare years when the buds or blooms freeze, you will be rewarded with the good years when the blooms escape frost and last a normal span. If you like to take chances, a magnolia is worth trying; if you want the sure thing, stay away from magnolia.

Question: Can you tell me the name of the little blue-leaved grass sometimes used as a border plant?

Answer: You are probably referring to *Festuca glauca*, Blue Fescue, a low-growing bunch-type grass with very attractive silvery blue foliage. This plant is an easy plant to grow and makes an unusual border plant. It can be obtained from local nurseries, and should be used more in the home garden.

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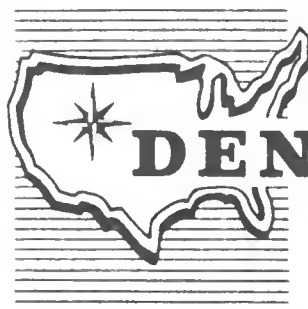
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The Green Thumb

Magazine for Rocky Mountain Gardeners



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The Green Thumb

Colorado Forestry and Horticulture Association

Organized in 1884

"To preserve the natural beauty of Colorado; to protect the forests; to encourage proper maintenance and additional planting of trees, shrubs and gardens; to make available correct information regarding forestry, horticultural practices and plants best suited to the climate; and to coordinate the knowledge and experience of foresters, horticulturists and gardeners for their mutual benefit."

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The Colorado Forestry and Horticulture Association

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909 YORK ST.

DENVER 6, COLORADO

MEMO

Calendar of Events

The Green Thumb Program—Every Saturday morning on KLZ at 10:15 a.m.

Fun With Flowers — A lecture and demonstration, followed by the making of arrangements. Each person brings containers, mechanics, and materials. The workshops are open to everyone. They will be held each month at the following times and places:

Workshop I—Botanic Gardens House, 909 York Street, 9:30 a.m., the third Wednesday of each month.

Workshop II—Lakeside Denver Dry Goods, 44th and Harlan, 10 a.m., the first Friday of each month.

Workshop III—Arapahoe County Fair Grounds, Littleton, 9:30 a.m., the third Tuesday of each month.

Floral Art Courses — Opportunity School. Every Thursday, 9 a.m.-11:30 a.m., 1 p.m.-3:30 p.m., 6:30 p.m.-9:15 p.m. There is no charge except for materials.

Columbine Garden Club, Idaho Springs, Thursday, August 11, 9:30 a.m., field trip to Summit Lake and Mt. Goliath Alpine Unit of the Denver Botanic Gardens. Public invited. Meet at the Chamber of Commerce Booth in Idaho Springs. Bring sack lunch and drink. For further information write Mrs. C. A. Kutzlet, Box 37, Idaho Springs.

BOTANIC GARDENS HOUSE MEETINGS

909 York Street

July 11—Judges' Council, 10 a.m.

July 13—Organic Gardeners, 8 p.m.

July 14—Suburban Garden Club, noon.

July 18—Botanic Gardens Board, 7:30 p.m.

July 20—Fun with Flowers Workshop, 9:30 a.m.

July 27—Cheesman Park Garden Club, 11 a.m.

July 28—Civic Garden Club, 1 p.m.

August 2—Forest Hill Garden Club, 12:30 p.m.

Green Thumb Editorial Committee, 2 p.m.

August 3—Botany Club, 7:30 p.m.

August 4—Orchid Society, 7:45 p.m.

FLOWER SHOWS

Green Thumb Garden Club, Denver, Wednesday, August 10, 3 to 8 p.m., at the Washington Park Community Church, 1195 South Race.


Morning Glories Garden Club, Lakewood, Tuesday, August 16, 2 to 5 p.m., at St. Paul's Episcopal Church, 10th and Garrison Sts.

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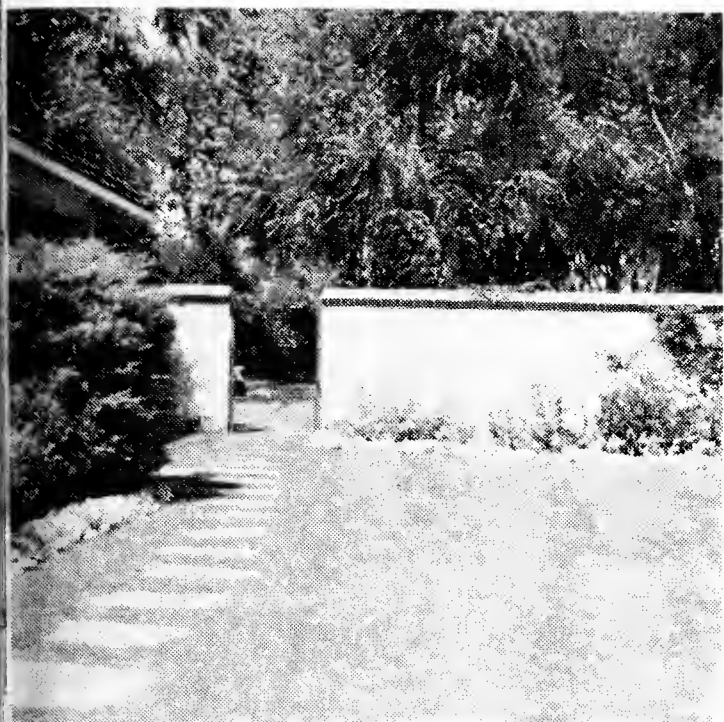
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Wednesday and Thursday, July 13
and 14. Two days full of ideas for
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Have you wanted to convert your
garden to a more desirable outdoor
living area but needed new and exciting
ideas for easier maintenance and at-
tractive features? The 1960 Look and
Learn Garden Tours give you the op-
portunity to see a choice selection of
beautiful gardens and learn what others
have done to make their surroundings
more liveable.

Two more gardens have been added
to our list of Gardens Designed for
Outdoor Living. One is an older place,
the other as modern as tomorrow.
Both are gems. The owners of the older
place capitalized on last fall's snow-
storm. A large old tree fell across the
garden and had to be removed, giving
them a chance to replan their rose gar-
den. This is a northwest corner, but
the roses are doing beautifully. A large
redwood screen was placed at the north
end in line with the formal layout of



Night lighting adds hours to your gardening pleasure. Two of the gardens on our
tour are featuring night lighting. Photo Courtesy General Electric Company.

the rose garden and sundial. It definitely adds to the appearance of the yard and will serve as protection for the roses. Brick pavers used in the rose garden have been carried through and under large fir trees. Outdoor furniture has been added resulting in a cozy little "tea room" which opens onto the rose garden. A beautiful perennial border, herb garden and another little covered corner are added features. Even a tree house has been constructed by the grandson.

Pebbles, stone, and choice plants

are featured in our second garden. This would be the choice of today's Moderns as it requires much less maintenance, yet is attractive at all times. Detailed planning is evident here. Many hours of work and many disappointments are avoided by those who plan their gardens.

Tickets are available now at our office, 909 York Street. The garden will be open from 10 a.m. to 5 p.m. both days in addition, the two gardens featuring night lighting will be open until 9 p.m.

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Mr. and Mrs. Dabney Otis Collins
5315 Montview Boulevard

Mr. and Mrs. Ernest C. Graham
1200 South Shoshone

Mrs. Alfred Watts Grant
300 Vine

Herbert Gundell
4032 W. Greenwood Pl.

Mr. and Mrs. T. W. Henritze
2423 East Exposition

Dr. and Mrs. Reed Johnson
1601 South Windemere Avenue

Mr. and Mrs. J. V. Petersen
909 Ridge Road

Mr. and Mrs. Arthur G. Rippey
2525 East Exposition

Mr. and Mrs. Lawrence Sandler
220 South Birch

Dr. and Mrs. N. L. Shere
456 Cherry

Mr. and Mrs. Richard Simon
2 Viking Drive

HOW TO LIVE BESIDE BUSY HIGHWAY WHEN STATE DOESN'T PLANT

One can learn to live beside a highway "but the state has an obligation to do all in its power to make the adjustment as easy as possible," according to Charles R. Carroll, returned counsel to the overseas operations of General Motors Corporation as reported in the New York Herald Tribune. Mr. Carroll lives at Grandview, New York, beside the New York throughway.

He feels that the state authority has not done what it should to make life tolerable for him and his neighbors. For example, he feels that the state should plant a screening hedge between his three-quarters of an acre and the road. He has spent more than \$1,000 on hemlock, spruce, fir, viburnum, witch hazel, holly, and other species to screen off the traffic and its noises and fumes. "After the planting," he stated, "it's not as terrible as I thought it would be."

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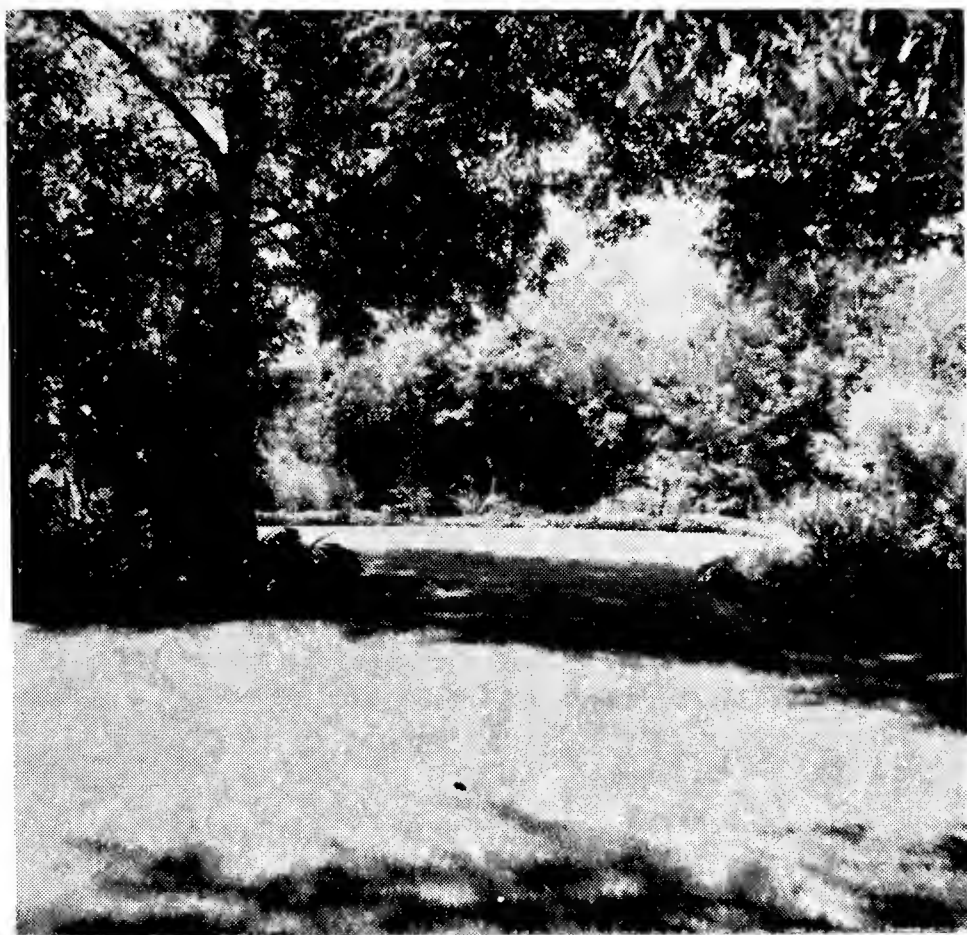
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LANTING

DEAS

OR



THE COOL GREEN GARDEN

By MRS. PERSIS M. OWEN

IT WOULD seem that a cool green garden is seldom planned that way, but like Topsy, simply grew. In most cases, it is the logical aftermath of over-planting of trees and shrubs. Those spindly little trees and diminutive shrubs standing row on row in the nurseries each spring, have a way of overriding almost every gardener's good judgment, and four or five are planted where one would have sufficed. After this liberal planting all is well for three, four, or five years. The grass grows green, the perennial beds flourish brilliant in the sun, while the trees and shrubs spread wider and wider, stretch higher and higher.

Then one spring the jonquils are lovely, the tulips fair, but the perennial beds have lost their usual sturdy look. June comes and the perennials are weak and frail. They are soaked and fed and fed and soaked. The plants grow tall and spindly, give out few sickly blooms and develop mildew.

Fall arrives, and with determination and much back-bending the gardener divides the old perennial clumps and makes a list of new ones for spring planting. April again, and in go the new plants. The accustomed mass of bright bloom is awaited impatiently. Summer finally arrives and is a major disaster. June and July produce only a few weak blooms from the iris, poppies, phlox, and delphinium. August is on the wane and the Shasta daisies bend a few small blooms to the ground. The chrysanthemums are tall slender spikes with hard little nodules at their tips. The perennials are worse than they were last year, and the high hopes of spring have sunk even lower than the garden budget.

Then in August, on a hot dry day under a broiling sun, a friend drops in. "My, this is wonderful," he or she says, collapsing in the shade of the trees that have kept right on growing wider and wider and taller and taller. "You

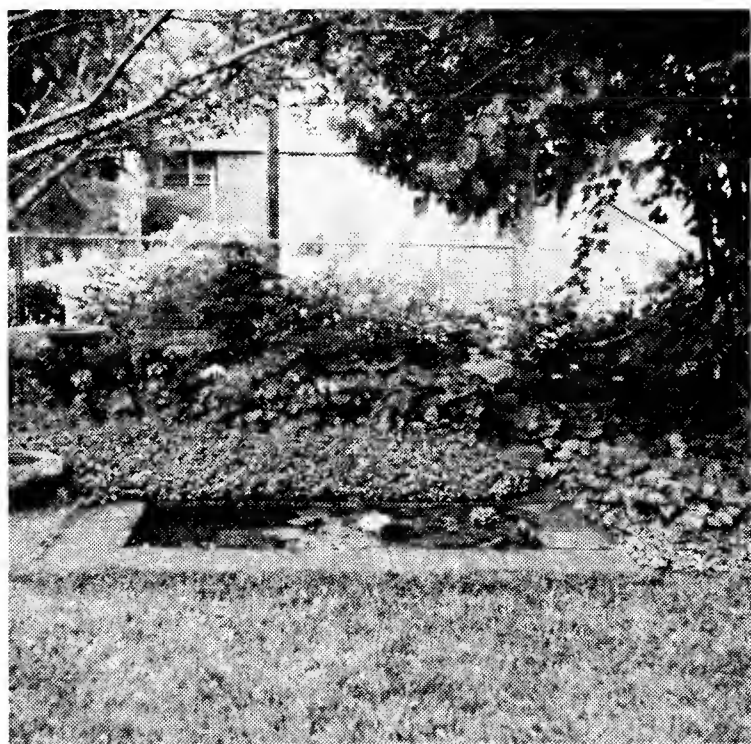
have a real shade garden here, haven't you!"

You hide, as best you can, your amazement as you look about. Your garden is cool. It is green. And it is practically all shade; only here and there is a patch of direct sun. You can hardly wait until your visitor is gone.

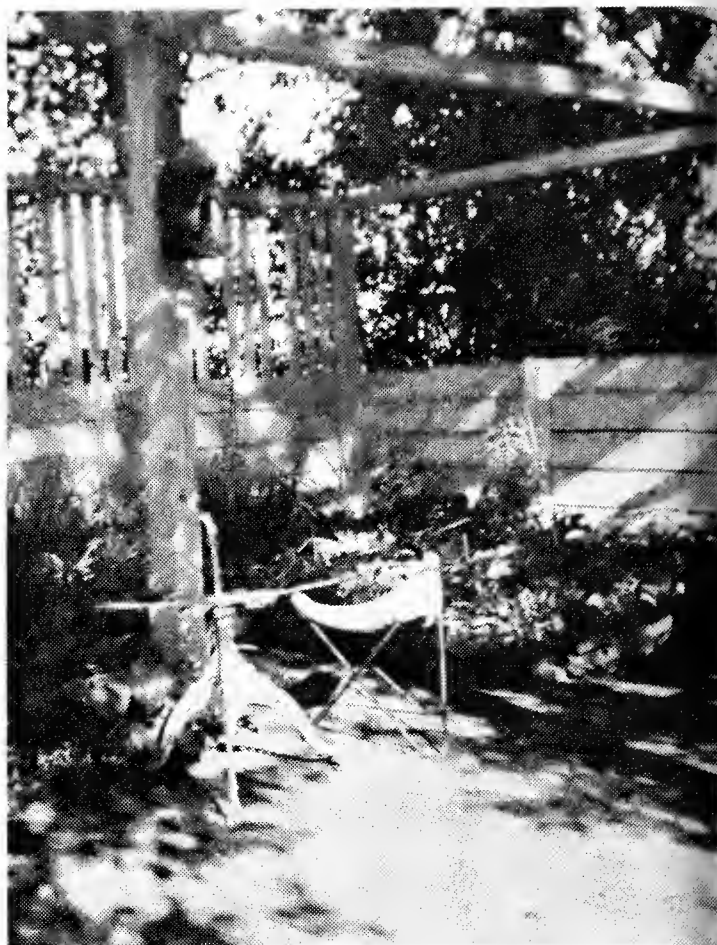
"A shade garden!" All those lovely shade plants you have had to pass by in the catalogues can now be yours. There is no thought of taking out a few trees or removing some shrubs. Iris, phlox and daisies are out of mind now. A cool green garden, a shade garden, is your one desire. And since gardeners, of necessity, must be optimists, you see the whole garden rampant with trilliums, lady-slippers, and anemones.

The list of shade plants is made and revised, for shade plants seem to be quite a bit more expensive than those, to the shade enthusiast, very ordinary perennials. At last the order does not exceed the budget too far and is sent off for spring delivery. All is well now. Only the garden budget is suffering, but it is used to it and makes no complaint.

At last, spring again. The "shade



An attractive pool backed by sedums, violets and columbine fill a shady spot in Clyde Learned's garden.



A shady nook in the author's own garden.

lovers" arrive. The perennials barely poking above ground are discarded without a qualm, and in their place go numerous tiny, delicate whips of green. The jonquils come up, love as usual, the tulips bloom, and here and there those shade lovers send up a few more bits of tender green. They make an effort to grow and bloom, but it is a feeble effort and as the summer drags on, one by one they give up the struggle. By fall only a few have survived. The garden has indeed become a problem child. What to do?

Now is the time to take to heart the old saying, "It is never too late to learn," and delve into the nature of shade and shade plants. It comes as a surprise to many that all shade is not alike. There is the warm moist shade found mostly in the Eastern, Southern, and Pacific coast states, and the cold dry shade of the plains and mountain states. The plants that thrive under one condition seldom grow well in the other.

There is also much information to be gleaned about the soil requirements of these shade plants. They must have a loose humus soil with some sand for



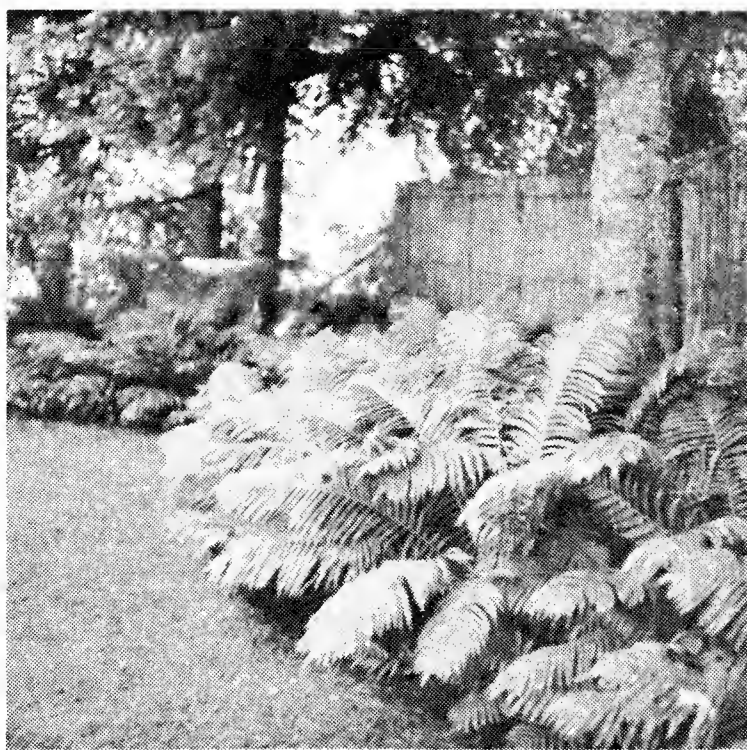
erous Begonias lend a splash of color to a shady area.

good drainage. The soil must be continuously moist, but never so wet as to be soggy. Simply pouring water on shade plants will not do. They will mildew, rot, and before another season, disappear. The moisture content of the air can seldom be changed, but the plants can be given the soil and drainage they require and the soil moisture they like. This means careful preparation of soil before planting; incorporating into the soil peat moss, leaf mould, any humus one has, as well as some sand, finely crushed rock, or gravel.

Once the beds are so prepared, a list of shade plants can be made with a fair expectation that when planted they will grow and prosper. The budget, however, will fare better if the first list includes only those plants that are found in the local nurseries and listed as hardy, rampant, and self-sowing. Nurseries can no more afford problem plants for their locality than can most gardeners' budgets. When these few precautions are taken shade problems begin to disappear.

The list of hardy shade plants is not too limited. *Anchusa myosotidiflora*, about twelve inches high, has large heart shaped leaves which remain a deep green all summer, and lovely

sprays of forget-me-not blue flowers held well above the foliage. It blooms in late April and early May, and seeds itself well. White, blue, or purple violets make nice edgings or ground covers. Columbines (the white and yellow seem to be more hardy in gardens than our native Rocky Mountain blue or the pink hybrids) especially like a sandy humus soil which is not too wet or they will develop crown rot. Let them seed themselves and, after a season or two, in June the garden will be starred all about with their delicate blooms. *Phlox divaricata*, wood phlox, will be very pale in full shade, a good lavender blue with some sun. Primroses in many colors do well. Try several varieties. If they do not thrive in one location, try them in another. They are quite sensitive to air currents, or the lack of them, as are most shade plants. Bleeding Hearts are a must. The old-fashioned variety, *Dicentra spectabilis*, is the largest and most showy, but disappears altogether later in the summer. It should be marked and some shade annuals planted close by. Some other varieties offered keep their green and flowers intermittently all summer, but both plants and flowers are rather small and not too showy.



Colorado Male Fern is very much at home in a cool green garden.

The Funkia family flourish in the shade. They all have fine foliage and their blue, lavender, or white flowers are held well above the foliage, a good trait in any plant, but especially so in shade plants. They bloom in late August and early September, which is most acceptable, since a great many shade lovers are spring or early summer bloomers. Ferns are good fillers between blooming plants, and the English Ivy does very well as a ground cover. It grows much faster as a ground cover than as a climber, and is not so apt to winter kill.

After the shade garden is well established then try some of the more fussy, exotic shade plants. Trilliums, lady-slippers, anemones—there is a long list. All are lovely, some with rather large showy flowers, although not too brilliant as to color. In fact, the flowers of most shade plants come in very muted colors, so keep all furniture and accessories used in the shade garden low-keyed, so as not to over-shadow the soft colors of the flowering plants.

There is a short list of annuals for shade. Pansies, violas, and Johnny-jump-ups should be treated as annuals in the shade garden. Give them some sun, or they will sprawl and become leggy. Let the annuals go to seed in late fall. Somehow, the seeds will find themselves a bit of sun and surprise and delight you the next year in many far-flung unexpected places.

The care of the cool green garden is easy, as garden care goes, once the ground has been prepared correctly and the moisture requirements are understood. The plants like to be closely spaced, for with close planting the day and night temperature of the soil and its moisture content are kept more nearly even. Any weeds should be pulled. The ground should not be cultivated, except possibly for a very light

top scratching. Even this is not desirable if the soil is of the proper loose sandy, consistency, for most shade plants are shallow rooted and will not tolerate having their roots disturbed.

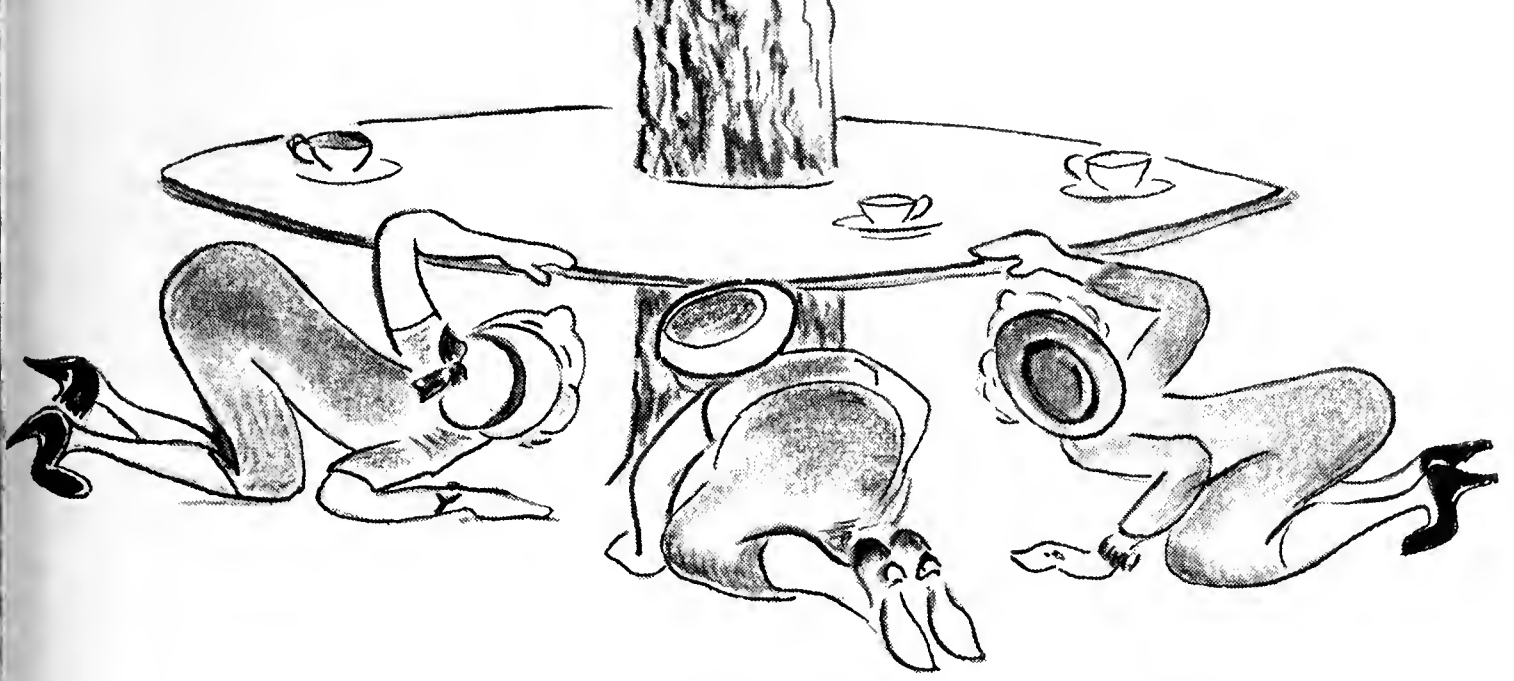
Slugs and mildew are the two worst enemies of shade gardens. Slugs can be controlled by spreading any good slug bait around the plants. Moth balls or moth flakes sprinkled on the ground also help. Mildew can be avoided by never top sprinkling the plants and by spraying now and then with Bordeaux mixture.

If one has unknowingly developed a cool green garden, and to be happy must have some bright colored flowers, all is not lost. Potted plants are the answer. Use pots of several sizes, the eight inch ones are probably the smallest for practical garden use, and on up to ten, twelve, fourteen inches—there is no limit to their size. Find the few sunny spots you have and group the pots there, never less than five in a group, and the more the merrier. Plant them with any gay annual you like. The only care is watering when needed, feeding every two weeks, and picking all faded flowers.

Bulbs, bulbs, and more bulbs should be planted through the shade garden. They bloom before the shade is too heavy and help to satisfy that innate demand for color that most gardeners seem to have.

The cool green garden is a real joy if one can only accept its limitations. It will never, never be a riot of gay color, but when the hot dry days of July and August come the gardeners can relax under the overshadowing trees and enjoy its soft-colored, delicate blooms. The cool green garden is poetry, soft music, and peaceful rest—something hard to come by in the noisy, brittle, flamboyant world of today. Have a try at it!





WHAT DO YOU LEARN WHEN YOU ARE LOOKING AT GARDENS?

By M. WALTER PESMAN

“OH, isn’t it keen?” the sweet young thing gurgled, as the rump wandered through the garden.

“Yes, in your language,” responded the kindly garden lover, “you might say it that way. In reality the artistic design is well carried out, the plant material is carefully chosen, and arranged, the color combination is superb, the maintenance almost perfect, and the general mood of the scene is one of interest, mystery and charm. Besides, this garden reflects the innate character of the owner.”

This incident may perhaps, exaggerate the difference between various people who have the opportunity to “look and learn” from good gardens.

After all, the same sort of thing happens when two or more people go abroad, to the mountains, attend a lecture and compare notes afterwards. One carries away in proportion to what one brings.

“Though Pussycat is sent to Paris,
Rome or Berne,
He’ll merely say ‘meow’ on his return.”

A keen observer can get a rich garden education out of “look and learn” tours. Here are some hints that may be helpful.

Almost the prime advice is: look up and not down, especially upon entering the garden. Let it impress your subconscious mind. Some gardens are joyful, others mysterious, others grand—generally depending on the home owner behind it. A good garden has a soul!

Looking for individual flowers you may miss this soul.

Closely connected with this is its general design. Do its proportions please you? Does it present a picturesque and pleasing sky-line? Is your eye unconsciously drawn to its choice corners? Does it have variety and unity? Are its colors harmonious?

Not until you have been impressed—favorably or unfavorably—by these all-over qualities, should you scrutinize a garden’s plant material. Even then, the choice of trees and shrubs should have attention before the flowers.

There should be a pleasing balance between evergreen and deciduous plant material. Too many conifers look funereal, too few may give the impression of unsubstantiality.

Trees should be in scale with the size of the building; many modern homes are low and are overpowered by tall trees. That does not mean we

can't have good-sized trees in the background.

Does the house look as if drowned in foundation planting? Are the shrubs too coarse? Are there too many red shrubs?

You see, once you begin to look with your mental eye as well as the visual eye, then you begin to really learn. They say that a picture tells more than a thousand words; we could add that a living picture—and that is what a good garden is — means ten times as much again. Even without recognizing a single plant, you can get ideas and ideas for your own garden.

For plant material a good garden is a regular cyclopedia. Again, we should keep in mind that just colorful annuals do not constitute a garden;

they may be cheerful and exciting, but should be harmonious as well. And they should carry on through most of the year. Some clever home owners have learned that a few scattered perennials may save the day at times. What not?

The Green Thumb, at various times features articles on roses, perennial annuals, groundcovers, peonies, irises and novelties. By preserving those special numbers you'll soon have a regular textbook on gardening.

For past articles see January-February 1959, January-February, March 1958, for annuals; October 1959, June 1958 for perennials; June 1959, 1958 for Iris; March 1959, June 1958 for Roses; and June, July 1958 for novelties.

INDOOR GARDEN WITH FLUORESCENT LIGHTS

You can establish an indoor garden in the basement or spare room of your home with fluorescent lights. Amount of light needed varies for different kinds of plants. African violets do best with 500 foot candles, while gloxinias and orchids need about twice this amount. Various garden annuals grow best when they are small with about 1,200 foot candles.

For an indoor garden you must provide proper temperature and moisture conditions as well as light. Most house plants need a temperature of 65 degrees to 70 degrees in addition to water and fertilizer.

You can locate your indoor garden where water can drip or splash without injury to surroundings. A shallow, watertight pan with a layer of fine gravel or coarse sand will serve as a suitable base upon which to place pots. It also provides a surface from which water can evaporate to maintain a favorable relative humidity.

“Miller owns this field, Locke that, and Manning the woodland beyond. But none of them owns the landscape. There is a property in the horizon which no man has but he whose eye can integrate all the parts, that is, the poet. This is the best part of these men's farms, yet to this their warranty-deeds give no title.”

—*Ralph Waldo Emerson*

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PARK INFRINGEMENT

This article is a reply to Mr. Johnson's report of the Tree and Park Committee in the May Green Thumb. John C. Wister is a noted horticulturist and author. At the present time he is Director of the Arthur Hoyt Scott Horticultural Foundation of Swarthmore College, Swarthmore, Pa. He has visited Denver many times and is an enthusiastic booster of Colorful Colorado.

The May 1960 *Green Thumb* reports that the state of Colorado has the power to take land from municipalities for new highways even if this land has been and is being used for park purposes. This power was affirmed by the Supreme Court of the state in its decision of February 16, 1960.

All persons who are interested in the preservation of parks and other public open spaces will regret this decision. It is, in effect, an invitation to the highway departments to enter such public park lands rather than go through private property.

The decision as quoted does not mention the question of compensation. The whole crux of the situation in trying to save our botanical gardens, arboretums, parks and scenic areas from being whittled away by highway engineers would now seem to revolve around the question of just and adequate compensation. If we can make it too expensive to go through park lands, the engineers will be more interested in finding other routes not involving park destruction.

If highways are put through built-up areas the owners of houses are compensated for the property. Values are arrived at either by negotiation or through condemnation and court proceedings after appraisals. It is comparatively easy to appraise a three-story house or a ten-story office building. The cost of constructing these or replacing them is readily established.

In the case of open lands, the present habit is to consider these of little value as no buildings are destroyed. The highway authorities apparently do

not take into consideration the fact that they are destroying areas dedicated to the public for their use and enjoyment.

It is difficult to put a money value on such use or enjoyment. Who can say what an open lawn is worth in a crowded city, or what meadow land with a stream or pond and background of woodland, which city people come to enjoy, is worth in dollars to that city. What is a fifty-foot specimen of a common oak, maple or pine worth? To take down a fifty-foot specimen and then plant a five-foot tree somewhere else is neither just nor adequate. And what value can be placed on a tree so rare that young plants for replacement are not available in nurseries?

There have been many appraisals of shade trees on suburban lots. When these have been destroyed by storms, owners have claimed losses on their income tax returns and such claims if based on height of tree, spread of branches etc., and backed by appraisals from recognized tree experts, have been allowed by the courts. There are also known values for trees of various ages in commercial orchards.

How such valuations can be adapted to trees, or to open areas, in public parks is not clear. The idea, however, is worth exploring.

Should those who feel that trees and parks are a necessity for urban living give up in despair and say that nothing can be done to prevent the present day destruction in the name of highway progress? Must everything give way to the automobile? Or can we,

who believe in parks and park lands, oppose each new proposed invasion and insist that where park lands are taken for highways the city should be compensated by lands of equal value for parks to be located elsewhere?

It is my belief that we all have been derelict in not banding together more quickly in order to oppose such park invasions. Our horticultural societies and our horticulturists have been too inarticulate in defense of the park lands which they have helped to develop and which they believe to be of importance to the public. In the present instance the Colorado Forestry and Horticulture Association should insist on proper compensation when parks are invaded.

This compensation might be, as has been suggested, in the form of an equal area of land. It seems to me, however, that such a formula should be amended by saying not only an area equal in

size, but an *equal* area in a *part* of the city in *which the values are equal* high. An acre ten miles from the center would not be just compensation for an acre taken from the center of the city where a park is needed the most. If the land is not available in the city and it is necessary to go far out of town, then instead of one acre there should be 10 acres or 100 acres that would be of equal monetary value to that part which had been destroyed.

These are a few suggestions as to how a more satisfactory condition could be brought about in the future. There need much discussion and the advice of competent lawyers. But first of all, before any of that is done, our horticultural societies need to do their part in educating public opinion and making them realize what they are losing when park land inside a great city is taken away for a highway.

John C. Wister

REMEMBER THE DUST BOWL!

On May 12, 1934, soil from the southern plains blotted out the sun over Washington, D. C., and landed on ships hundreds of miles off the Atlantic coast. The Great Drought extended from Canada into Texas and New Mexico. Hundreds of farmers moved out.

The Soil Conservation Service then successfully practiced contour farming, erosion control, terracing, and re-established pasture instead of bare-land farming. It was a slow process, but it worked.

When the rains came, people forgot. "Suitcase farmers" leased land, plowed up more land, made a fortune and repacked their suitcases.

Now we are ready for another dust bowl, unless rains come again. A few places, like the Dalhart area in Texas, have learned their lesson and now have land that will "stay put." Other plains regions are bare and bleak again. We may, again, see those ominous dust clouds.

"Green Thumbs" in the towns and cities are somewhat ironical unless backed up by "green hands" provided by the countryside. We are all responsible for conserving soil, water, natural resources.—M.W.P.

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Bold Beauty with ORIENTAL POPPIES

By ROSE CHRISTENSEN

A visit to Broadview Nurseries several years ago convinced me that I had been overlooking one of the most spectacular plants ever to grace a garden. Here Oriental Poppies bloomed in an array of colors ranging from white to many shades of pink, red and brilliant orange. A lush watermelon pink was a must for my flower garden. Ordered in June when the blossoms were at their height, the plant was delivered in early August. Planted in full sun with good drainage and plenty of room for growth, my first poppy formed leaves that autumn and bloomed the following year.

Since then I have added many varieties and found them one of the showiest and most satisfactory plants in my garden. They thrive for years with a minimum of care. Planted in average garden soil, with little if any fertilizer or cultivation, they are disease resistant and are never attacked by insects or pests. Too, Oriental Poppies are not affected by late spring frosts. Although the bloom period may be delayed the plants have never failed to bloom in the 15 years I have been growing them.

Some varieties grow to heights of six feet or more and tend to fall over when heavy with bloom. The round wire peony supports placed around the plant while less than a foot high in early spring will confine the plant and make it erect as it reaches full height and bloom.

Propagating Oriental Poppies by root division in August is extremely successful. The old plants have usually died down by that time and may be divided by digging the entire plant and making divisions or by simply cutting to the soil and removing part of the old root. Be sure an eye is attached to the root cutting, and plant the eye portion an inch below the soil surface. Water well. New leaves should appear above the ground in a few weeks to remain during the winter. Since the plants continue to grow larger each year allow two feet between plants.

Oriental Poppies are good companions to grow with delphinium and peonies since they bloom about the same time. A few blossoms make striking flower arrangements. Select newly opened flowers for cutting, sear stems immediately over a flame before plunging in deep water to harden. The unusual seed pods provide variety in color and texture in dried flower arrangements, wreaths of pods and cones, and on wooden or woven plaques.

If your flower garden lacks vibrancy in color, plant some of the bold Oriental Poppies to open a new world of interest and exciting pleasure for many years to come.

(Mrs. Christensen, a past president of Home Garden Club, has served as an expert on Look and Learn Garden Tours during many seasons.)



Ceramics by Margaret Johnson.

ART IN THE GARDEN

By FRANCES WHITE NOVITT

Rocky Mountain Chapter, American Society of Landscape Architects

MAN has used objects of art in natural settings, almost from the first time he set up an altar by a spring in the forest. Early Persian and Chinese Kings had trees of gold and gems in their gardens, and the greed of the Spanish explorers reached fever pitch on hearing of the gold and silver flowers in the palace gardens of the Inca kings. Today, fine art in our own private gardens gives an esthetic enjoyment which helps us shake off our daily tensions. The garden art discussed here does not refer to families of white enamel ducks waddling across the front lawn, or pink plastic flamingos dipping their beaks into the bird bath.

If we can come home from work on a hot summer day, go out into the garden, feel the freshness of foliage and flowers, hear the music of water falling into a small pool, and let our eyes follow the lines of a vase, a statue, or the patterns of a mural or a charming little mosaic set in the paving, we begin to feel the tensions of the day slipping away. To realize how beautiful are the things that man creates

is as important as it is to appreciate the beauties of nature.

The forms and media of garden art today are imaginative and varied, and we do not have to go far from home to find excellent examples. Many of Colorado's nationally known fine artists are creating works of art which are most compatible to the garden. More and more local artists are being commissioned by garden owners and landscape architects as specific parts of the landscape plan. It is hoped that this article will help to make some of them and their work better known.

Sculpture comes first to mind when one thinks of garden art, often in connection with a fountain or pool, or alone as a feature to give character to its whole location, or to terminate a view, or to mark the place where two view lines intersect. In any case it should be located where one can get a long look at it, see it from all sides if it is a form in the round, and walk close to it to enjoy its detail. This applies to all types of garden art, and if one analyzes some of them, it is apparent that they are quite varied.

Some forms in the round are a sculpture, a vase, urn or planter, a bird bath, a mobile hung from the patio roof, a lamp or light holder, a fountain, a fire basket, and a screen or divider. Bas relief forms include a decorative wall plaque, and a design in very low relief, done perhaps in sections of glazed ceramic, set in the terrace surfacing, in a spot where a less imaginative solution would be a pool or a flowerbed. Flat designs include plaques or murals in a variety of media, on walls, screens, and fences, and also designs on table tops, in paths, steps, and paving.

Some of the weatherproof materials for forms in the round and bas relief include stone, cast stone, concrete, glazed ceramics, wood, wire, sheet metal, cast metal, welded metal, wrought metal, putty aluminum, fiberglass, plastics, foam glass, featherock, enamelled metal, and colored glass. Flat designs on horizontal surfaces are carried out with pebbles, bits of colored glass, and small ceramic tiles, set in cement. On walls, flat designs are done in fresco, mosaic, and even in oil on wood or canvas for protected places.

Prices depend on several factors—the complexity of design, the material, the artist, and the size of the piece.

Size is not always proportional to cost, because it sometimes takes as much time to design a small piece as it does a large one. Prices are mentioned here only in a very general way, because it is important to give some indication of what one might buy in certain price ranges. For fifteen to seventy-five dollars, one can purchase an original ceramic bowl or planter, a small wire sculpture, a wall decoration of enameled metal and timberline wood, a mosaic design, from one to three square feet in size, set into the paving, or a small simple mosaic table top. One can also buy an abstract design in wire and colored glass to hang from a tree. A fine sculpture of the head and shoulders of a garden figure could be bought for seventy-five dollars if it were cast in a mold, and there were several copies.

For seventy-five to one hundred fifty dollars, one could buy a bas relief for a garden wall. It would be two to three feet high, and modeled in reinforced concrete or cast in a sand mold. Bas relief sculptures are less expensive than sculptures in the round. The latter, modeled in terra cotta or putty aluminum, are less expensive than those in cast stone or metal, which require sectional molds. A small weld-



Frances White Novitt was born and raised in Denver. She was graduated from the University of Denver in 1941 with a degree in anthropology, and in 1942 with a degree in art. She has worked for S. R. De Boer, Landscape Architect, and for the Planning Division of the Denver Parks Department, and at present is with S. L. Huddleston, Landscape Architect. She became a member of the American Association of Landscape Architects in 1958. She and her husband are part-time silver craftsmen, and have made contemporary silver jewelry for exclusive shops throughout the United States; their work has been shown in various local and national exhibitions



A. — Sculpture by Duane Johnson.

B. — Sand castle. About 18 inches high.

C. — "The Garden" by Duane Johnson.

D. — "Spring" garden, designed by Duane Johnson.

E. — Ceramics by Duane Johnson.

F. — "Koala Bear" by Duane Johnson, concrete bas relief.





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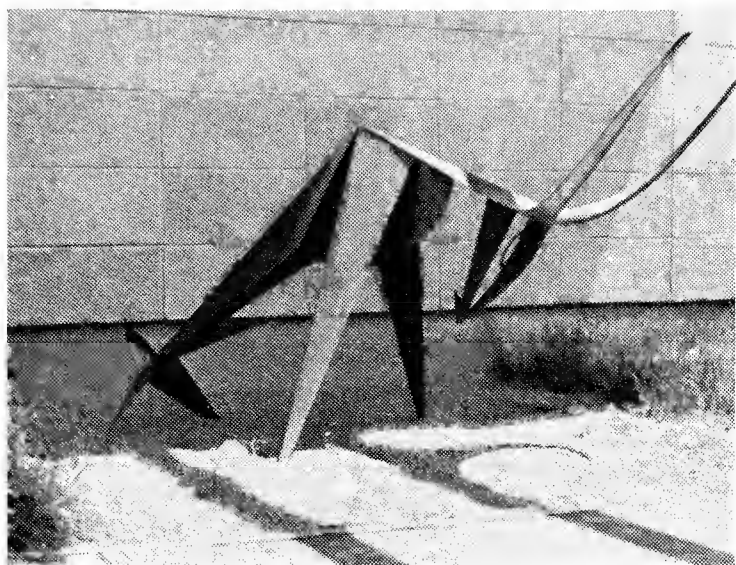
cotta by Duane

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Metal sculpture by Wilbert Verhelst in garden of Mr. and Mrs. Royal Hassrick.

ed metal statue, 15" to 18" high, might sell for about one hundred dollars.

A three foot statue in the round would cost from three hundred to eight hundred dollars, depending on materials. The casting alone of a life size bronze statue would cost well over a thousand dollars. A large metal mobile would cost perhaps four hundred fifty dollars, and a mosaic mural of some sixty-four square feet might cost about eight hundred dollars.

Let it be emphasized that artists are not known for their wealth, and although some pieces may seem expensive, the hours of work, and the cost of materials usually leave the artist very little profit.

Colorado artists make all types of garden art on commission, in all price ranges. This means they will make a piece for a special place in your garden or in your patio. They will explain what they can do for the amount of money you want to spend, and they want your ideas on the subject and the material. They often have examples of their work in their studios which you may choose from.

The fine work of sculptor Marion Buchan, 2393 Raleigh St., is represented by large sculptures in several Denver gardens. She has also designed



Mural by Roland Detre at the home of Mr. and Mrs. John Scott.

many beautiful small pieces, such as a welded iron statue of St. Fiacre, the French patron saint of gardeners. This is to be mounted on a pointed iron stake, so that it may be moved from place to place in the garden. The bird baths she designs are meant to be set low in some rather protected place like the base of a tree, where birds actually will come to them, rather than on a pedestal in the center of the lawn.

Sculptor Edgar Britton of Colorado Springs works in subjects and materials most compatible to outdoor settings. Probably the best known examples of his work in Denver are the beautiful bronze doors and bas relief of the Denver United States National Bank. Painter-sculptors Wilbert Verhelst, 405 Ingalls, Lakewood, and William Joseph, 2701 Reed St., Lakewood, are two more talented artists who are making pieces for garden settings, particularly in metal and mosaic. Yvonne Hammond, Evergreen, is a painter and sculptor who makes handsome wall plaques and planters of concrete.

Painter Mina Conant, 1519 East Mexico Ave., makes charming mosaic designs to decorate walls, and to be set into terrace paving. Of the latter type she says "One of the most successful materials for a mosaic that is



Mina Conant making a mosaic design in a flagstone terrace.

exposed to year round outdoor temperatures is ordinary bathroom tile, preferably broken into irregular pieces. The face is glazed in a great selection of pretty colors, while the clay body has the somewhat rough texture that is needed for a good bond with the cement that holds it in place. (Smooth edged materials such as bits of glass or pretty rounded pebbles, although attractive, tend to fall out unless very skillfully used.) Remember that water which creeps into cracks and freezes there is very destructive to any kind of pavement. To be most effective the design should be simple, bold, and without tiny or complicated elements, in colors that look charming with the surrounding pavement material, but with a few strong darks for contrast and smartness."

John Billmyer, 1519 East Mexico Ave.; Jean Petersen, 1327 East Cornell Ave.; Ed and Mary Jane Oshier, 1050 Wadsworth Ave., and Duane and Margaret Johnson, of Evergreen, are some of the best ceramists in Colorado. Many of them create garden art in other media as well. The Oshiers and Margaret Johnson work in enamels, Duane Johnson works in leaded stained glass from small hangings to large panels, and makes sculptures in wire



Mural by John Billmyer and Mina Conant on six inch ceramic tiles. This material is very suitable for quite large outdoor murals.

and ceramics. Jean Petersen makes beautiful designs in mosaics.

M. Albin Boniecki, 2125 East 13th Ave., sculptor, does fine statues in a more realistic manner, and also designs fountains with interesting water effects.

Space does not permit mention of all artists, but there are several important artists' organizations, and a phone call to one of their members would put a prospective buyer in contact with a number of good artists. John Roach, 2804 South Zurich Court, is president of the Fifteen Colorado Artists; Bill Lee, 1631 Glenarm Place, is corresponding secretary of the Artist's Equity; Jean Petersen is president of the Colorado Society of Ceramists. Exhibitions of the work of Colorado artists are held at the Denver Art Museum, the Boulder Art Museum at C. U., and the Colorado Springs Fine Arts Center. Every spring there is an exhibition called "Own Your Own" at the Living Arts Center of the Denver Art Museum, where the work of Colorado artists is for sale, so that a buyer may see the pieces on display and purchase them on the spot. At all these shows there are fine examples of ceramics, sculpture, mobiles, etc., which would be at their best displayed in a garden.

COMPOSTING

By IRENE (MRS. JOHN) SCOTT

Colorado Federation of Garden Clubs, Inc.

GARDENERS have gardens. Regardless of how lovely gardeners may appear at social functions or in the society column, in most instances, their white gloves are covering hands that have dug in the dirt with a frequency no lotion can camouflage. Gardens fulfill most lives, as this poem suggests:

"In my (Colorado) garden,
I find everything I need;
And I see the birth of beauty,
In each tiny, magic seed.

While the world is filled with turmoil,
And the nations are at strife,
I am happy with my roses,
And my trusty pruning knife.

It makes me very thankful,
Just to have a humble part;
Assisting Mother Nature,
With her great creative art.

From the modest little Daisy,
To the most exotic flower;
I see the mystery of life,
Revealed, each blessed hour.

So I sit and dream at sundown,
When the birds have gone to nest;
And am grateful for my garden,
With its peace, content, and rest."

These excerpts were taken from *My Garden*, which won a prize in a National Hospitalized Veterans Writing Contest for Edward McGivern.

But, gardens, of course, are to be shared, too, and if you haven't listed yours with the Visiting Gardens Chairman of your club or society (Iris, Rose, Gladiolus, etc.) please do. Perhaps all the publicity about gardens, public, private, memorial, historical, friendship, etc., has left you feeling that your spot of garden is inadequate.

Any garden is worthy of visitors if it's outstanding in landscape design; if it's interesting; if it's well kept; if it features special plants or plants at particular times such as Mums, Dahlias, Daylilies, herbs, fruits or vegetables (come out and see my eggplant, okra, soybeans that the bugs bypass, or so I've been told, peanuts, climbing strawberries, Sojanas); if it fits the surroundings; and if you just like to be hospitable. Before rodents took to rockets, you could bring the world to your door via a better mousetrap. Today, you achieve the same with a better garden.

Even if nary a caller came to your premises, you'd be repaid for your preparation and anticipation. You'd keep your garden in tip-top shape, just as a hostess who's holding open house. It's a wonderful excuse to get rid of some less desirable plantings, and experiment with something new and different and maybe difficult or challenging. And you'll get the family's cooperation, especially if your grounds include a child's plot, which it should. Be sure everything is properly labelled. And if you have a surplus of some plants or cut flowers, this is an ideal time to give them away. Guests are pleased to take something they like home with them. They'll associate you with the gift, too, which is a nice way to be remembered.

Remember, too, that Visiting Gardens is one of National Council's major projects. Visiting Gardens has been called the very essence of the garden club movement. Through these tours is created an awareness of many associated phases, such as horticulture, landscape design, color harmony, birds, litter bugging, color, garden therapy and others.

Nor is this emphasis on Visiting Gardens new. King Montezuma II (1480-1520) was regarded as a great monarch with pleasant and naturally spacious gardens containing herbs and fragrant blooming flowers which gave great pleasure to the multitudes who visited them. And so, you're going to get up out of your patio chair and visit some gardens. If you know where you're going, fine. If you'd like some suggestions, Hear Ye.

Consult your *Colorado Composters*. State chairman of Visiting Gardens is Mrs. George Atkinson, Johnstown. Mrs. Atkinson, I'm sure, has a compiled list of the gardens within the scope of each club, which has either been sent her by the local club's Visiting Gardens chairman, or president. The district director staff is higher up the official ladder, and Mrs. Harlan E. Cluphf (South Central District and Open Gate) has an Englewood area listing of gardens. She obtained help from other noted gardeners, one being Mr. S. R. De Boer, 515 East Iliff. Mr. De Boer, author of *Around the Seasons*, not only has a large listing of places to visit in and around Denver, but he has listed what you may expect to find there. It was Mrs. Cluphf who thought visiting Gardens would be a timely topic for this column. Wish some of the rest of you would send suggestions. Oh, yes, the State Chairman of Visiting Gardens will probably send you an official visiting card, and, of course, the seasons, days and hours the gardens are open to visitors.

If you plan a trip outside of Colorado, write to your National Chairman

of Visiting Gardens, Mrs. J. Kidwell Grannis, Rt. 3, Maysville Rd., Flemingsburg, Ky. (listed in the *National Gardener*). She will procure a card that will permit pilgrimages and visitations to beautiful gardens and historical spots that otherwise may be closed to the tourist.

Now, for the tour. You've contacted the owners of the gardens you plan to visit, and reaffirmed their invitation. (These lists are made-up months in advance, and unforeseeable changes may have been made) as to time, etc.; have your V.G. card in your billfold; your low-heeled shoes on; and a grateful greeting for your host or hostess. Formalities over, *stay on the paths*. Don't take pictures without permission. (The owner may be selling same for his pet charity or his club's Ways and Means, for gardens can be money-makers.) Do not pick or handle plants; conduct yourself the same as if you were in the owner's living room, a special guest, which you are. When leaving express thanks, and if you really want to be asked back, write a little thank-you note.

A note, before I forget it, from Mrs. Fred Harper, of the Headquarters Committee, tells us that the Federation's library in our room at 909 York Street will be open (have a hostess) every Wednesday from 9 to 4 p.m. She also says that The Crestmoor Mile High Garden Club has donated a tablecloth; The Crestmoor Park G. C., a silver serving tray; and Hearts in Flowers G. C., a lamp and wall clock.

Back to Visiting Gardens which may be viewed via the club chair with lec-

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tures and slides. A unit includes up to 100 Kodachrome slides, with the highest rental being \$3.00. For example, Arboretums and Botanical Gardens includes: Shaw's Garden, St. Louis (I plan to visit this in September); Washington Arboretum, Seattle; Arnold Arboretum, Mass.; Los Angeles Arboretum; New York and Brooklyn Botanical Gardens; Morton Arboretum, Ill.; Boyce Thompson Arboretum, Arizona; Fairchild Tropical Gardens, Florida. There's a unit on Rocky Mountain Region Gardens, Williamsburg Gardens, World Famous Gardens, etc. For a complete listing

and details see the *National Gardener*, Jan.-Feb., 1960 issue, pages 26 and 27, captioned "Illustrated Lectures."

So much for today's gardens. An unknown author projects us into the space age with lines apropos of tomorrow:

"In the garden of tomorrow, may there bloom for you

Only joyous, golden hours, and flowers of brightest hue,

May friendship grow on every side, from seeds that you have sown

And all the happiness you give, come back to be your own."



IN OUR LIBRARY

Birds In The Garden and How To Attract Them, Margaret McKenny. Grosset and Dunlap, 1939.

A practical and complete guide for persons wishing to enjoy around their homes the useful and charming companionship of birds. Miss McKenny uses many interesting anecdotes in dealing with the familiar birds of field and garden. Color plates reproduced from the works of some of America's famous nature artists and photographs with instructive and amusing captions accompany the text. Included are sections on bird homes and feeders, with construction plans; birds in the city garden; hunting with the camera; description of birds seen; plants to attract birds by sections of the country; planting to attract birds in the city garden.

Ground Cover Plants, Donald Wyman. Macmillan, 1956.

Dr. Wyman, Horticulturist at the Arnold Arboretum, Harvard University, has compiled the results of many years of research in this concisely presented manual on ground cover plants.

In alphabetical order he has described over 200 kinds of herbaceous perennials and woody plants which can be used as ground covers. Every phase of planting, growing, and care is discussed along with hardiness, propagation, maintenance, and ground covers for special purposes.

Landscaping With Vines, Frances Howard. Macmillan, 1959.

The graceful beauty of a vine well placed can add fresh charm to any landscape. The author devotes the first part of her book to the many uses of vines and outlines their general care. In the second part "... detailed information is provided for selection and care of more than 300 ornamental vines." "The decorative features of each vine are specified, and suggestions made for its best use in landscaping schemes." Introduction. This information includes size of vine; a complete description of the vine; climatic, soil and exposure tolerances; and care and maintenance of the vine. Photographs and drawings accompany the text.



PLANT AUCTION REPORT

Co-chairmen Mrs. Alexander Barbour and Mrs. Hugh Catherwood would like to take this opportunity to thank all the nurserymen, garden shops, and individuals who contributed time and materials for our Auction. Those attending found many good buys in plants and white elephants, and many enjoyed the food provided by Vella Conrad. The plant auction netted \$883.00, the antiques and white elephants \$843.29, the bedding plants sold by Clyde Learned \$360.00 and the food \$60.75 for a net profit of \$2,147.04. These funds will help assure the success of the Association and its many activities this year.

Following is a list of the commercial people who contributed to our success.

Alameda Nursery, Inc.
Amidon's Cash Nursery
Artistic Gardens Nursery and Garden Shop
Associated Nursery
Barteldes Seed Co.
Cottonwood Garden Shop
Country Fair Market
Creative Gardens
Euser Seed and Plant Co.
Hal Good Seed and Nursery Center
Green Bowers Nursery and Garden Center
Hill Garden Nurseries
Larsen Nurseries
Luby's Cafeteria
Marshall Nurseries

McCoy and Jensen
Northern Nursery Co.
Roberts Nurseries
Rocky Mountain Seed Co.
SaBell's Hillside Gardens
Sears Roebuck and Co. Garden Shop
Simpson Seed Co.
South Denver Evergreen Nursery
Swingle Tree Surgery
Tower Nursery
Tree Service Co.
Western Evergreen Seedling Nursery
Wheatridge Nursery
C. G. Wilhelm Garden Center and Nurseries
W. W. Wilmore Nurseries, Inc.
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DENVER BOTANICAL GARDENS



I. Mrs. T. A. White, Home Garden Club president, and Dr. A. C. Hildreth, Botanic Gardens director, question, "Should public bathing be limited to little birds?"



II. Planting time and the diggin' is easy in this well-prepared bed. Alice Quinn is under the hat, Dr. Hildreth, Fran Morrison.



Everything's coming up roses, miniature roses that is, for Home Garden Club of Denver. Clad in skirts, shorts and jeans, club members planted 100 miniatures in 16 varieties May 27 in a plot south of the Denver Rose Society's planting at the Botanic Gardens. Focal point of the area is a miniature bird bath.

III. "Half a proper gardener's work is done upon his knees." Proving the quotation are Bernice Petersen, Robin Long, Winnie Stratford and Clara White. Fran Morrison checks variety colors while Frances Watson and Verna Twist discuss plant placement.

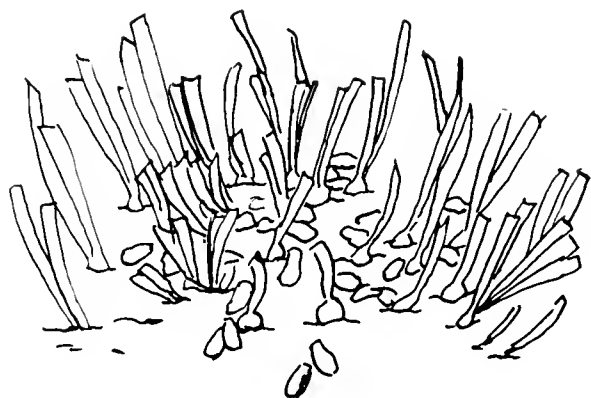


The Children's Garden has become a reality this summer. Pioneering this effort is a group of boy and girl scouts. Working in teams, these children have planted and are maintaining their own garden plots. They are being supervised by volunteer workers. It is the hope of the Botanic Gardens that this program can be expanded into the public schools in the future. Those wishing to see the Children's Garden will find it at the north end of the parking lot between Josephine and York Streets.



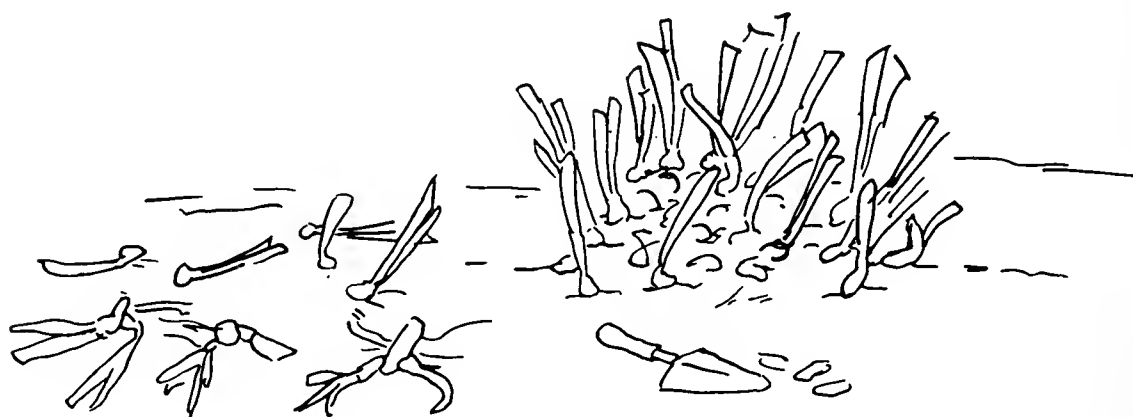
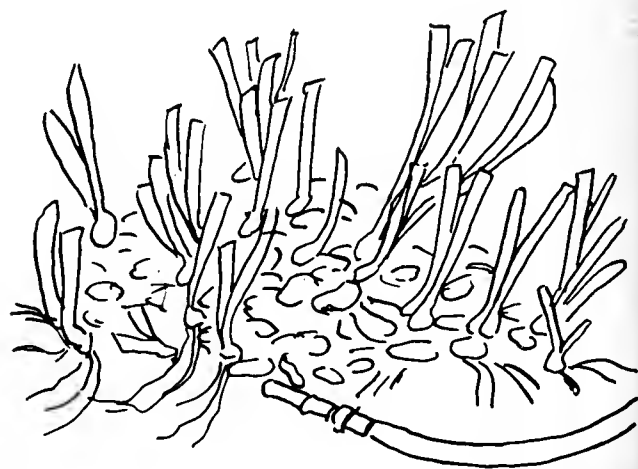
Dr. Hildreth looks on as members of the Civic Garden Club of Denver dedicate a Japanese Black Pine, *Pinus thunbergi*, to their past president Mrs. Reusch. This tree, planted on the north side of the herbaceous unit, is a welcome addition to our growing collection of unusual plants.

DIVIDING AND



This crowded clump was overdue for dividing in 1960. A single rhizome had been planted in 1956. Notice center of clump where rhizomes are growing over one another.

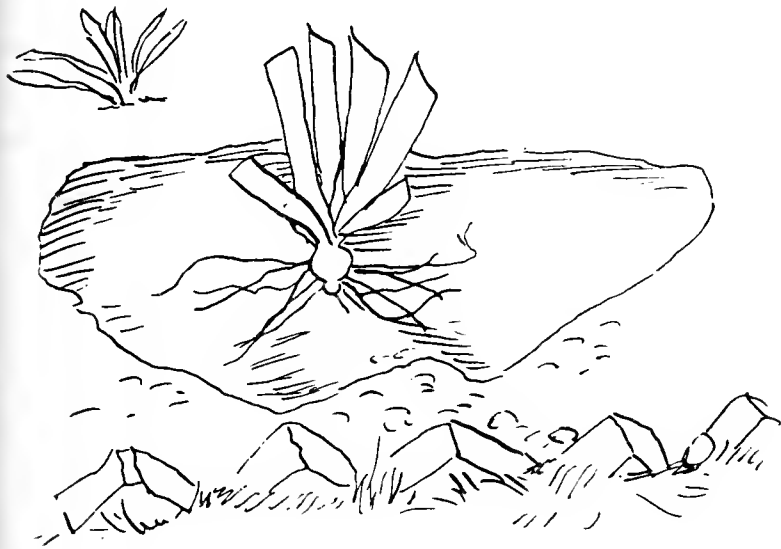
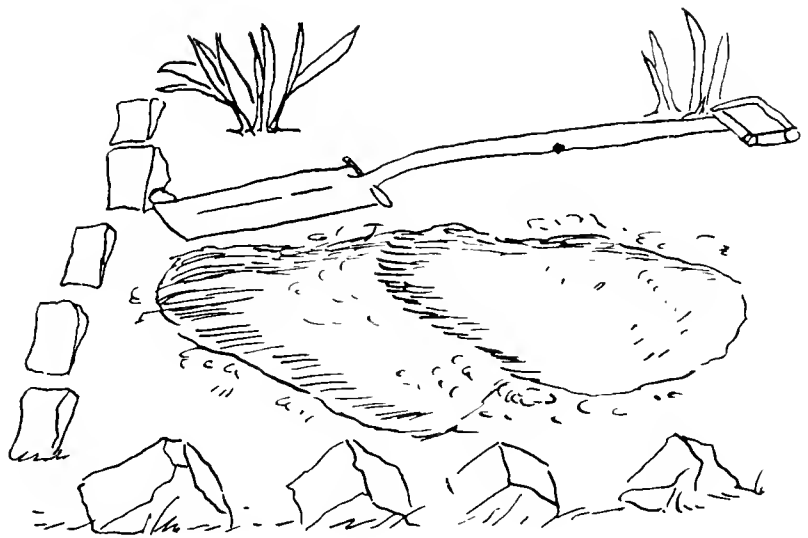
Clump was cleaned with hose stream after being dug. Rhizomes in center have very few white feeding roots, while healthy growing rhizomes circle the clump.



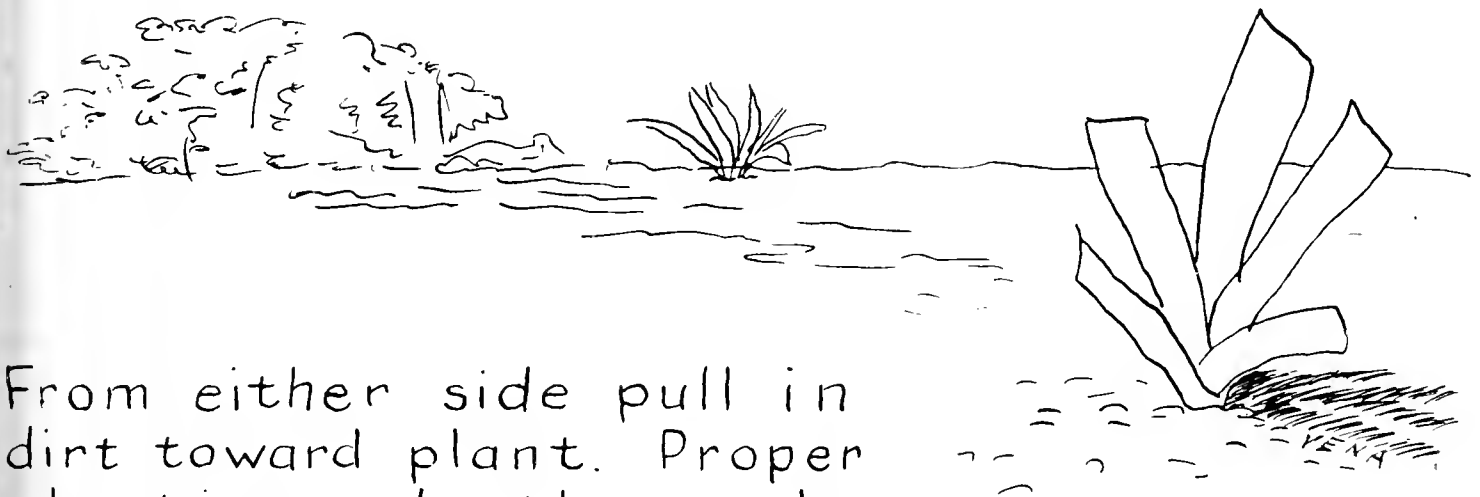
Old bloomstalks are separated from healthy, growing rhizomes. "Doubles" as in foreground are preferred by some for replanting. Before replanting wash rhizomes thoroughly.

PLANTING IRIS

Dig in plant food and cultivate well before planting new bed. Two slanting holes are dug, with a dividing ridge left in center.



Rhizome is placed directly over center of ridge with feeding roots spread evenly to each side. Thus, the plant is anchored securely.



From either side pull in dirt toward plant. Proper planting depth can be regulated by pressing on top of root. Firm with foot. Water well.



Toreador Marigold, 1960 All-America Bronze Medal Winner. Toreador, because of its hybrid vigor is a strong grower, 2 feet tall, and produces an abundance of ruffled yellow flowers from early summer until frost. Photo courtesy W. Atlee Burpee Co.

MARIGOLDS AND SUCH

M. WALTER PESMAN

WHEN you talk of "marigolds" it is difficult for the other fellow to know just what you mean. You ought to specify whether you have reference to the marsh, aztec, cape, Fig, african, Corn, French, or potkind. Many of them are not even the genus *Tagetes* which has been given to the marigold that Cortez found growing in Aztec gardens.

Those who insist that marigold be adopted as the "national flower" have a good point in the fact that *Tagetes* is entirely, one hundred percent American; its twenty or more species come from New Mexico and Arizona southward into Argentina.

The Spanish conquistadores liked the well-known golden-yellow flower heads and took the seed home to Spain. It did not take too long before marigolds were carried from Spain to

monastery gardens in Africa and France.

Before long they reached English gardens from France and Africa. By that time people had forgotten their Mexican origin. The English already had a golden yellow flower, calendula. Both it and the new *Tagetes* were called Mary's Gold: they were placed before the altar of the Virgin Mary. This was abbreviated to *marigold*.

The name caused difficulty, being applied to the one that had been grown in England, originally as a potherb (calendula), the tall one that came from Africa (*Tagetes erecta*), and the one from France, the low type (*Tagetes patula*). So, in order to prevent further confusion, these names became potmarigold, African marigold, and French marigold. The latter two were nothing more nor less than the Mexican marigold. Wild marigolds can still be found in Mexico.

In general there is a tendency to call a favorite plant by an exotic name. For that reason we need not be surprised that the big, tall marigold is called "The Rose of India" in France and the small one "The Carnation of India", discarding the "French" designation. Not to be outdone, the name in India is "The Good Luck Flower."

So as to be entirely informed, we should know that potmarigold still stands for *Calendula officinalis*, corn marigold is *Chrysanthemum segetum*, capemarigold, *Dimorphotheca aurantiaca*, and others (also called African daisy); figmarigold is *Mesembryanthemum* species (some called Ice plants), and marshmarigold is *Caltha palustris*, native in marshes in many places, including Colorado, where it is called *Caltha leptosepala*.

By this time, I am sure, your marigold lore is extensive enough to be safeguarded from saying: "A marigold is a marigold is a marigold." Even Gertrude Stein would not be bold enough for that!

TREES HAVE VAST COOLING INFLUENCE

Planners of homes, communities, and cities should consider more seriously the tremendous cooling influence of trees and other plants on their local environment, says the National Arborist Association. This favorable influence of trees materially increases with a corresponding increase in the size and number of trees, often making the difference between an attractive and desirable place to live and one that is undesirable.

Trees have a great capacity for preventing the passage of solar heat to surfaces under the foliage canopy. The main reason for this is that most of the solar energy is used in photosynthesis and in transpiration. Part of the heat is lost by convection and part by radiation. On the other hand, bare soil as well as other materials, such as stone pavement, absorb great quantities of heat, later radiating it back into the atmosphere. Such materials need shade, thus transferring the heat level to the upper layers of foliage canopy, instead of near or close to the ground surfaces. Deciduous trees should be used, in order that in winter when higher temperatures are desirable nearer the ground level the foliage will have fallen, thus letting in full sunlight.

In hot summer weather nearly 1,000 BTU of heat must be absorbed for each pound of water (about $\frac{1}{2}$ quart) given off in transpiration. The vast cooling effect of foliage canopy is demonstrated by a test in California in a grove of irrigated citrus trees where experiments showed transpiration of water for a 12-month period amounted to 28 inches in the warm valley regions and 21.4 inches in cooler coastal regions.

"Cities and towns wishing to be cooler in hot summer weather, including individual home owners, should consider this cooling effect of trees and other plants in order to increase their summer comfort" advise the arborists. "Solar heat is stored in the ground surfaces and pavement releasing the heat as the air above the ground cools. This accounts for hotter, more uncomfortable summer nights wherever there is no canopy of tree foliage. Ground temperatures at a depth of an inch, have been measured and are over twice as high on bare ground as they are on ground shaded by trees, and other vegetation, with a large portion of this heat being released on hot summer nights, making them far more uncomfortable without tree protection."

A cleaner community is up to you — and it's as easy as 1-2-3. 1) Don't litter streets and sidewalks. 2) Don't put sidewalk sweepings in the street. 3) Don't throw trash from cars.

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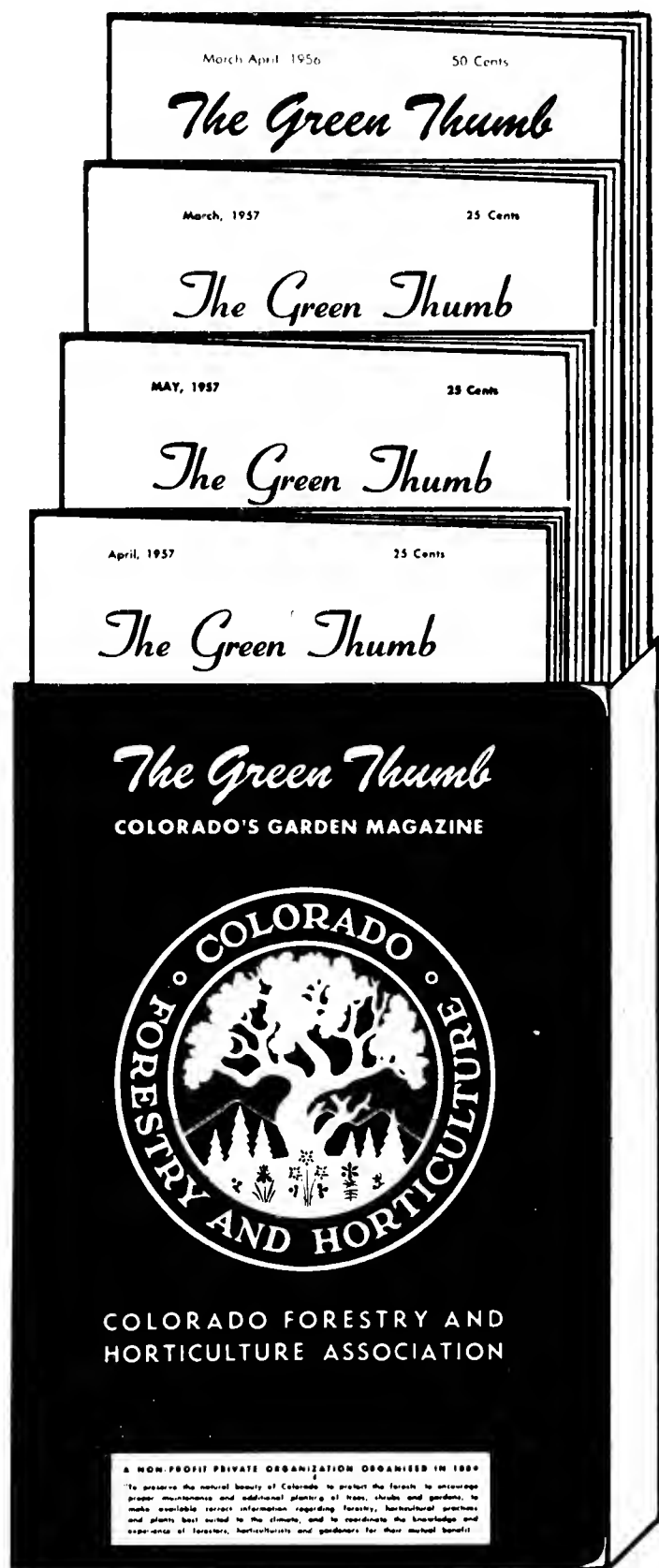
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DIG THESE QUESTIONS



Question: When can iris be thinned and transplanted?

Answer: Iris can be moved any time after the blooming season is over, but July is an excellent time to do this, since this gives the plant time to re-establish themselves before winter. In transplanting and thinning iris, take up the entire clump and wash or shake the dirt off the roots. Cut or break the clump into separate fans. Save only healthy looking rhizomes with light colored roots. Cut back the fans to about half of their original size, to compensate for destroying part of the roots. Replant in well-drained soil, barely covering the rhizomes. For directions with pictures, see page 218.

Question: The leaves of my green beans are being eaten by a small yellowish bug with black spots. What is it and what can I do about it?

Answer: This appears to be the Mexican bean beetle. It can be controlled with rotenone dust or malathion spray, following the manufacturer's directions. It is also possible to handpick and destroy these pests if they are not too numerous.

Question: Last year the leaves of my zinnias turned gray and dried up and were very unsightly. What can I do to prevent this happening again?

Answer: This was powdery mildew, a very common ailment. It can be prevented by avoiding spraying the leaves at night. A sulfur fungicide may be used, but usually careful watering will take care of the situation.



RELAX IN GARDEN

Seasonal Suggestions

It's vacation time. Whether you plan to travel or stay at home, you'll find that this is the best time to enjoy beautiful gardens. At home find a shady spot and a comfortable lounge chair and relax. You'll find a lot of beauty and color in the gay annuals like petunias, geraniums, marigolds, zinnias and others you've cultivated for mid-season display. If you're traveling, you can find many beautiful gardens in the towns you pass through by getting off the main streets. These short detours can be quite pleasant and they do relieve the monotony on long trips. Remember to take a litter bag so that you can do your part in keeping *America Beautiful*.

Back to gardening, it's unfortunate but true that our plants aren't on vacation and do need some care. If you are going on an extended vacation, be sure to engage a competent person to care for your garden. The heavy chores of planting are over and our July program in the garden is one of good maintenance. If carefully planned it can be routine and easy.

Since the weather is hot, watering is one of the most essential needs. Tests have shown that lawns need approximately one inch of moisture per week. They have also shown that on an average lawn this is best applied at one time by a long, thorough soaking. Light sprinkling each day encourages shallow rooting and weak grass. You will find, however, that there are areas that need watering several times a week, such as south or west facing banks, or areas adjacent to walks and drives. Most trees and shrubs if deep watered by soaking or a water lance will go 10 to 15 days between waterings in most of our soils.

Mowing is another problem with lawns. During the heat of the summer the best rule is to mow high, 1¾ inches to 2 inches high, and often. Where lawns have been heavily fertilized and growth is rapid it's advisable to use a catcher.

Make a weekly check of your shrubs, trees and flowers for insects and disease. Give them more than a passing glance, as many of the insects



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month is the Look and Learn Garden Tours July 13 and 14. This is a good opportunity to get new ideas for your garden by observing first hand. If you have time, the wild flowers should be putting on an excellent show in the mountains this month.—Pat.

are very tiny and difficult to see. Look on both leaf surfaces as some insects work only on the under side of the foliage. Evergreens can be checked by vigorously shaking a branch over a piece of white paper, then closely observing the paper for movement of the very tiny mites. With the handy hose attachments available you can do much of your own spraying, particularly on small trees and shrubs. On large trees and evergreens it is best to have them sprayed by a commercial arborist who has equipment to give them the thorough coverage needed for good control. Many of the reliable companies have a complete summer control program that can save you the worry and bother at a very reasonable price.

In your flower garden you will find that most plants flower more and longer if you keep the faded blossoms picked. Also, regular cultivation helps conserve water and cuts down on the weed population.



WATER IN THE GARDEN

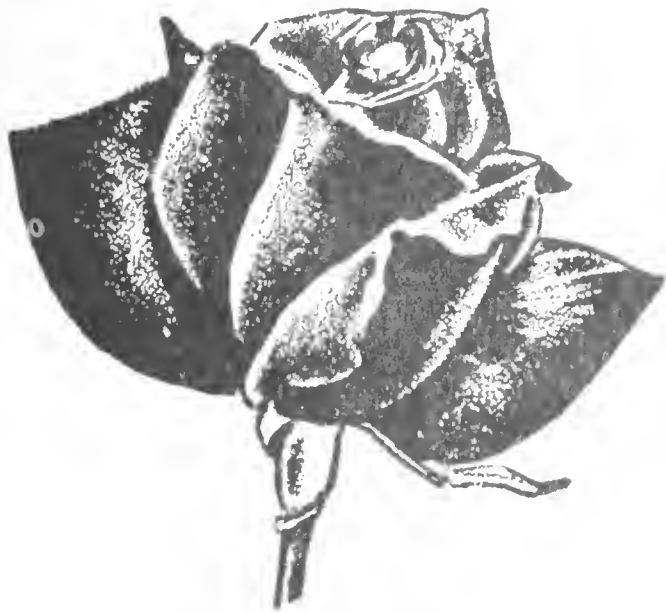
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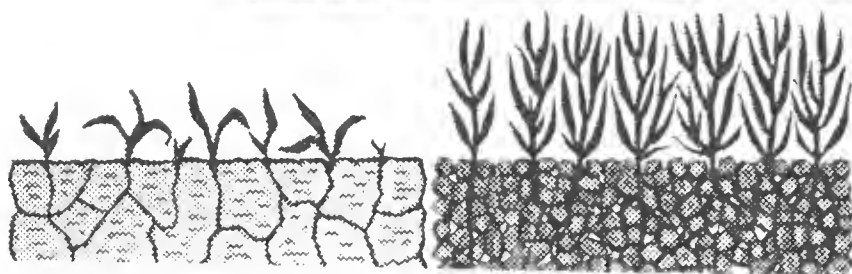
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The Green Thumb

Magazine for Rocky Mountain Gardeners



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LEADS TO A
FLOWER SHOW
page 232

WINTER MONS
ARE FUN
page 240

FEATURE GOLF
IN YOUR OWN
BACKYARD
page 243



AUG.
1960

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AUGUST

Vol. 17

No. 7

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The Green Thumb

Colorado Forestry and Horticulture Association

Organized in 1884

"To preserve the natural beauty of Colorado; to protect the forests; to encourage proper maintenance and additional planting of trees, shrubs and gardens; to make available correct information regarding forestry, horticultural practices and plants best suited to the climate; and to coordinate the knowledge and experience of foresters, horticulturists and gardeners for their mutual benefit."

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The Colorado Forestry and Horticulture Association

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DENVER 6, COLORADO

Calendar of Events

The Green Thumb Program—Every Saturday morning on KLZ at 10:15 a.m.

Floral Art Courses — Opportunity School. Every Thursday, 9 a.m.-11:30 a.m., 1 p.m.-3:30 p.m., 6:30 p.m.-9:15 p.m. There is no charge except for materials.

Workshop I—Botanic Gardens House, 909 York Street, 9:30 a.m., the third Wednesday of each month.

Workshop II—Lakeside Denver Dry Goods, 44th and Harlan, 10 a.m., the first Friday of each month.

Workshop III—Arapahoe County Fair Grounds, Littleton, 9:30 a.m., the third Tuesday of each month.

BOTANIC GARDENS HOUSE MEETINGS

909 York Street

August 8—Judges' Council, 10 a. m.

August 10 — Green Thumb Garden Club, "Nature's Calendar of Time," 3 p.m. to 8 p.m., at the Washington Park Community Church, Arizona and South High Street, Denver.

August 10 — Organic Gardeners, 8 p.m.

August 11 — Silver Spruce Garden Club, 11:30 a.m.

Turf Advisory Committee, 2 p.m.

August 11—Garden Club at Durango.

August 12 — Colorado Forestry and

Horticulture Association Finance Committee, 10:30 a.m.

Board Luncheon, 11:30 a.m.

August 13—Alta Vista Garden Club "Hawaiian Holiday," 2 p.m. to 5 p.m., at the Arvada Lions Club, 5725 Teller Street, Arvada.

August 14—Gladiolus Show, 2 p.m. to 6 p.m., at the Denver U. S. National Bank.

August 16—Morning Glories Garden Club, "My Book of Memories," 2 p.m. to 5 p.m., at St. Paul's Parish House, West 10th and Garrison, Lakewood.

August 17 — Morning Belles Garden Club, 9:30 a.m.

Golden Bells Garden Club, 2 p.m.

August 18—Suburban Garden Club, 12 noon.

August 18—Boulder Garden Club, Fort Lupton and Hudson Garden Clubs, "All Through the Year," at the Municipal Building, 330 Park Avenue, Fort Lupton.

August 22—Arvada Garden Club, 12 noon.

August 23-24—"Just For Fun" Dahlia Show, Downtown Denver Dry.

August 24—Morning Glories Garden Club, 12 noon.

August 25—Rosebowl Garden Club, 12 noon.

August 29, 30, 31 — Flower Show School, 9 a.m.

September 1, 2 — Advanced Flower Show School, 9 a.m.

Orchid Society, 7:45 p.m.

September 6 — Mountain View Garden Club, 10 a.m.

Green Thumb Editorial Committee, 2 p.m.

September 7—Botany Club, 7:30 p.m.

September 8—Rose Society, 7:30 p.m.

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We'll need to know how much space each exhibitor will need . . . and what to print on your sign . . . so please fill out and mail the entry blank below promptly. And . . .

***Bring your Dahlias to our Downtown Store on
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I will have _____ containers with Dahlias to show on Tuesday and Wednesday, August 23 and 24, at The Denver, Downtown.

Name _____

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Garden Club Affiliation (if any) _____

Variety of Dahlia (if you'd like this on card) _____



In her arrangement which placed second, Mrs. Goforth used Gladiolus leaves, Bells of Ireland, and Hens and Chickens.

THE GREEN THUMB GOES TO A FLOWER SHOW

Class 60. Magazine Marvels—Library, using a 1960 issue or issues of **GREEN THUMB** somewhere in the design — base, accessory, container, etc. Winner to receive an added special prize of a year's subscription to **GREEN THUMB**, courtesy — Colorado Forestry and Horticulture Association.

The preceding excerpt was taken from the schedule of Suburban Solarium Flower Show sponsored by the Sunshine Seeders Garden Club of Littleton, June 17, 1960. There were 5 entries in the class. The winning arrangement was made by Mrs. John Scott. Second and third place honors went to Mrs. Douglas Goforth and Mrs. Jess Gibson, respectively.



Over photo—Mrs. Scott's first prize arrangement featured Tiger Lilies, Meadow Rue, and dried Eucalyptus, Yarrow, and Cane.



Mrs. Gibson used Iris, Hosta, and Polygonium in her third prize winning arrangement.

SHRUBS FOR SUMMER

BY KATHARINE B. CRISP
Home Garden Club

THE GOLDEN bell, Forsythia, announces the coming of spring. It is followed by the Japanese quince, *Japonica*, with its red flowers. When the snowy white garlands of *Spiraea* appear, we know that spring is really here. Lilacs and other spring flowering shrubs form a succession of bloom as the summer months approach. Gradually the shrubs receive less attention and flowering shrubs are almost forgotten as the summer annuals appear.

There are, fortunately for us, several desirable summer shrubs that should be planted more frequently.

Rose-of-Sharon, *Hibiscus syriacus*, is not a rose, but a member of the malvaceae family. It is also called shrubby *Althaea* and sometimes listed as *Althaea*. It is an erect growing shrub, five to fifteen feet high with a formal shape. The flowers resemble those of the hollyhock. It blooms from July to frost and gives color when other shrubs have finished blooming. The *Althaea* most commonly seen has purplish magenta colored flowers. It is regarded as a half-hardy shrub. Among the newer varieties are "coelestis", a lavender blue; "totus-albus" a white; "monstrosus", a white with purple eye.



Hibiscus syriacus.

There are some that are double-flowered and some with variegated leaves.

The shrubby cinquefoil, *Potentilla fruticosa*, is a most desirable shrub. It is charming in a low hedge or as an edging. It is compact in growth, slow growing and can be pruned to any small size. The foliage is fern-like and there is a constant display of small golden cup-shaped flowers throughout the summer. It survives sub-zero temperature and grows in most any kind of location; dry or moist, shady or sunny. *Potentilla fruticosa* is our native dwarf shrub. A variety called Gold Drop has dense foliage, is many flowered and vigorous.

Another yellow flowered shrub, but partial to shady places, is St. John's Wort, *Hypericum*. The flowers are yellow with many usually conspicuous stamens. The leaves are resinous, dotted without marginal teeth or lobes. *Hypericum moserianum*, Sun Gold, bears golden flowers all summer. This is a shapely dwarf shrub, oval in shape, 2½ to 3 feet in diameter.

The common hydrangea, *Hydrangea paniculata grandiflora*, member of the *Saxifrage* family is a hardy shrub. In midsummer it bears large masses of



Hydrangea.



Froebel Spirea.

white bloom that are very handsome. It is an upright, straggling shrub three to five feet high. The leaves are oval, rounded or heart-shaped at the base. The variety *grandiflora*, called hills-of-snow, has all the flowers sterile and in a ball like cluster. In our area the plant may kill to the ground each winter but in a protected place will bloom each year. It grows best in rich, porous, somewhat moist soil.

The late flowering Anthony Waterer spirea is *Spiraea bumalda*, a hybrid between *Spiraea japonica* and *Spiraea albiflora*. The flowers are deep pink to white in flat umbrella like clusters. The common form is Anthony Waterer with bright carmine flowers. Variety *Froebelii* is taller with bright crimson flowers. Like all spireas, Anthony Waterer spirea thrives in any good soil but requires considerable moisture and sunny exposure.

Blue spirea or blue mist, *Caryopteris incana*, not a true spirea but resembles some species, is a member

of the Verbenaceae family. It is a handsome shrub, three to five feet high. It bears showy light blue clusters of fringed flowers that do not bloom until mid-September. The foliage is grayish-hairy. *Caryopteris incana* will survive several years if planted in a protected location. It is one of the latest flowering shrubs and a desirable plant for the flower border. A variety called "Azure" has been developed by the Cheyenne Horticultural Field Station. The flowers are described as heavenly blue, the foliage is a richer color and the bush is more upright.

A very hardy and drought resistant shrub is the lead plant, *Amorpha canescens*. It is a member of the pea family, having compound leaves with numerous leaflets arranged feather-fashion in pairs but with a single terminal one. The flowers are blue, small, pea-like, in a dense, usually branched terminal cluster 4½ inches long. It is easily grown in ordinary garden soil. It may be planted in the shrub border or as a specimen plant.



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A virgin stand of mature aspen sawtimber in the San Juan National Forest of Colorado.

THE ASPEN OF COLORADO

By C. GORDON WYATT

Timber Staff Officer, San Juan National Forest

MOST of us associate the aspen forests of the Colorado Rockies with some aspect of outdoor recreation. The very name "Aspen" has a soft delicate sound that epitomizes many of its characteristics. The pale green leaves and slender smooth white trunks, the soft rounded silhouette of foliage against the clear blue sky—every nature lover thrills to the sight of aspen standing high against the mountain slopes.

This is the tree that heralds the changing seasons in the mountains. In spring the aspen slopes change suddenly from winter's bleak gray to soft new shades of pale green, in pleasant contrast to the dark green spires of spruce and fir. In the heat of early summer the rustling of the quaking aspen creates an illusion of cool moun-

tain breezes. The blazing glory of the aspen in autumn is a sight to behold, and what portrays more boldly the approach of winter than falling aspen leaves scattered anon by a chilly October wind?

The aesthetic appeal of the aspen forest is well known, but to the forester this tree species has many other values as well. He knows quaking aspen (*Populus tremuloides*) as a deciduous soft-textured hardwood of wide distribution throughout the United States and Canada. A country cousin to the cottonwoods and Lombardys, aspen is an aggressive species in its forest habitat, quick to establish itself on sites which have been disturbed by fires or logging. In the practice of forest management, aspen is grown in even-aged stands due to its intolerance to shade



Vigorous young sprout growth of aspen has reached a height of 20 feet or more thirteen years after logging.

As a consequence the mature stands of merchantable aspen must be harvested by clear cutting, so that the new young forest of sprouts and suckers can grow and thrive in full sunlight.

In its aggressiveness to become established in the forest, aspen often occupies land with poor soil and dry aspect. Its growth on these sites is short and scrubby, and is valued chiefly for watershed protection and aesthetic appeal. Aspen reaches its best development on moist, well drained loamy soils, and under optimum conditions the trees will grow to sawtimber size and attain a height of 100 feet at maturity.

The commercial use of aspen in wood products industries is largely undeveloped in Colorado at the present time. However, several industrial uses of aspen have materialized in the Rocky Mountain area within the past fifteen years. The soft pliable wood fibers make high grade excelsior for packing, and it is especially well suited for filters in certain types of air-conditioning units. Colorado aspen wood

is beginning to receive wide use as core stock in the manufacture of veneer-surfaced doors and furniture. Some aspen logs are being sawed into lumber for use as box and crating material. But perhaps the most interesting form of industrial use in Colorado has been in the manufacture of match sticks.

In the community of Mancos in southwestern Colorado, the Diamond Match Company built a match factory in 1946 and began manufacturing match sticks or "splints", as they are known in the trade. The aspen timber for this manufacturing process has been purchased through a series of timber sales on the nearby San Juan National Forest. Each year the company logs and processes two to three million board feet of aspen bolts, furnishing steady employment for 50 or more people. Just recently the factory was taken over by a new owner, Hunt Foods and Industries, Inc., and the plant now carries 66 employees on its payroll. Each thousand board feet of aspen logs yields about 7½ million



Mature aspen timber is harvested and transported by truck to the manufacturing plant.
San Juan National Forest, Colorado.

matches. It's a little hard to believe, but this factory has been slicing out 20 billion match splints every year for the past fifteen years! Chances are if you are a perennial pipe smoker or fireplace lighter, you've probably been using Colorado aspen matches for some time.

Present-day industrial use of aspen in Colorado barely taps the huge volume of raw material available in our extensive forests. This vast storehouse of wealth awaits ultimate development in future years for such diverse products as paper, fiberboard, toys and novelties, lumber, decorative interior

panelling, furniture, charcoal, and even textiles.

The rapid re-growth of aspen after cutting quickly restores watershed and aesthetic values. Its young tender shoots provide browse for wildlife, and livestock graze the forage which grows beneath its protective canopy. The mountain beaver uses it for food, for shelter, and for building material to construct his dams. Campers seek out its wood for its special qualities as campfire fuel. Its beauty appeals to nature lovers everywhere. Truly aspen is a tree of many values!

These elaborate suggestions are only offered to those who are about to lay out a new garden regardless of expense, but I venture to add that whatever may be the breadth of the ground, or the length of the purse, the principles which I advocate might in most instances be accepted with a sure success, namely, that there should be:

More grass and less gravel,
More flowers and less bare soil,
More curves and fewer straight lines and angles,
More hardy and not so many "half-hardy" plants,
More arrangement and less disorder,
More shrubs, evergreen and golden, to "cheer the
unglenial Day."

—From *Our Gardens* by S. Reynolds Hole, 1899

E.O.S. FLOWER SURVEY

By MORAS L. SHUBERT

Last August we decided to prove that there are still plenty of wild flowers to look for even though Autumn is approaching in the higher altitudes. So we suggested the end-of-season (E.O.S.) contest to see who could find the greatest number of species in bloom between the 14th and 24th of August. Please refer back to your August, 1959, issue of the GREEN THUMB, 16:228.

Such a satisfactory response was received that we thought you would like to continue this year. Here are the results of the top four lists:

First place goes to the Botany Club of the Colorado Forestry and Horticulture Association for their list of 115 species recorded on August 23 on a tour of 32.2 miles from Denver to Squaw Pass. The altitudinal range was from 5300 feet to about 9800 feet.

Second place was earned by the list of 71 species in bloom on August 20. Mrs. C. A. Kutzleb of the Columbine Garden Club in Idaho Springs found these between her home and Chinn's Lake only 12 miles away. The altitude ranged from 7500 feet up to 11,000 feet on her trip.

Mrs. Alexander Barbour and Mrs. Marjorie Shepherd tallied 52 species with flowers on August 16. Their record would be first place if we considered the highest number of species per mile traveled, for they found all of these on a three-mile hike between the altitudes of 10,500 feet and 11,250 feet, an average of 17 different kinds per mile!

Mrs. H. E. Benson deserves an honorable mention for sending in two lists representing her finds on trips dated August 19 and August 23. Mrs. Benson, of Idaho Springs, is also a member of the Columbine Garden Club.

One person suggested a July survey-contest of the different kinds of flowers in bloom. This sounds like such a good idea, that it suggests that we might appropriately have a survey for almost every month of the year. If enough members signify an interest in a project of this sort, we can get it started in January, 1961. Yes, you can find flowers in bloom out-of-doors in Colorado every month of the year! But at the present our objective is to see how many species, especially those thought to be early-blooming ones, are still in bloom when we are apt to think that the season is finished.

This brings us to August, 1960. This year let's make our search a little later, between August 26 and September 6. It might be a good idea also to limit our zone to above 7500 feet in altitude where it is really beginning to be autumn.

The rules are essentially the same as they were last year:

1. Make a list of each kind of wild plant that you find in bloom.
2. Make a record of the date, distance traveled, the location of the trip, and altitudinal zones surveyed.
3. Use suitable references and be as accurate as possible in identifications, but if a genus is recognized but the species is too hard to identify, give a clue (for example, *Chrysopsis* sp. hairy leaves and stems).
4. Make a copy of your list for the GREEN THUMB and send it in before September 15, 1960.

A check list will be made from the lists sent in last year, so if you wish a copy, send a self-addressed stamped envelope to the GREEN THUMB, 909 York Street, Denver 6, Colorado.



PENSTEMONS ARE FUN

BY SUE N. MCLANE

THREE years ago my husband and I knew very little about the genus penstemon, which is in reality the perennial just made to order for readers of *The Green Thumb* magazine. We had one flowering plant which we had brought in from the wild, and which we admired very much.

Then we learned of the American Penstemon Society and its advantages. At first I thought I was too busy for any additional activities, but Myrtle Hebert, a penstemon enthusiast, suggested that she send me the Society's seed list and that I allow her to include me in a round robin letter.

Like the Arab's camel, little by little the Society crept into my tent, and there came a day I was forced to confess to my better half that I had sent in my dues.

What happened next would fill reams. We began to inquire what species grew in our neighborhood, and to look for those species. Some we found, some we did not. We learned that Colorado alone boasts forty-four species, eight of which are to be found in our own county.

We began to learn to read botanical literature like a globetrotter reads French. We drove miles and miles, and brought in a variety of weeds, and a few penstemon. These latter we shared with members of the Society from coast to coast.

Collecting plants from the wild was only one of our interests. We ordered plants of the genus from every available source. We contacted members of the society from coast to coast and exchanged plants with them. And as the summer wore on and we observed the plants in the wild as well as in our garden we began to get an overall picture of this immense family.

Three hundred or so odd species and subspecies of penstemon exist, and but one of which are native to North America. People in England have long valued the penstemon as a border plant, and have propagated a few good garden varieties. Until a few years ago our best ones came from there. Sponsors of the plant here were largely people interested in botanical species or in those adaptable to rock garden.

Today a rapidly increasing group of hybridizers, amateur and professional, are at work. Penstemon has progressed in a few years from a shy little wild flower to the Belle of the Border. Moreover, as can never be said of roses or iris, or in fact of many genera when we get where we are going we will know exactly how we got there. Mr. Glenn Vichmeyer of the Nebraska State Experiment Station at North Platte has complete records of the species used in crosses to form a gene pool equal to those from which our modern roses and iris have evolved.

This alone will add untold wealth to the information of hybridizers in every line the world over.

Last year in the lists of new plants for 1959 carried by the leading garden magazines, three penstemon appear. Lena Seeba, a white flowered strain of the Seeba hybrid, Prairie Bells, an improved Seeba-Fate production, and Indian Jewels, a cultivar Flathead Lake Hybrid. All of these have been purified by selection so that seeds produce comparatively uniform plants. Occasionally a throwback will occur which is inferior, as also occasionally a plant may appear which is greatly superior. It is the hope of the Society that any superior plants will be propagated

asexually as well as that any that are inferior will be destroyed.

It is also the hope of the Society that any one collecting species from the wild will honor the regard for beauty in nature, and observe the conservation measures necessary to preserve our wild flowers in the wild, as well as in our gardens.

No gardening article is complete without a list of species and varieties available to the average gardener. Therefore, I am listing a few, by no means the best, but the best available. Each year more nurseries are adding more penstemons to their lists. (Nurserymen reading this should contact Glenn Vichmeyer for the latest.) Get on the wagon and you too can have fun with penstemons.

Name	Color	Height (variable)	Remarks
Fate Hybrid	white	3-4 feet	This group has grey glaucous foliage, and stout stiff stems. Not reliably hardy in extreme north.
Seeba Hybrid	to pink		
Grandiflorus Hybrids	to purple		
Prairie Bells			
Lena Seeba	white	3-4 feet	
Indian Jewels	red through blue	3-4 feet	Green foliage, long blooming, tough
Firecracker Plant	red	20 inches	Good form of <i>P. Barbatulus</i> .
Rose Elf	pink	15 inches	Good old variety, small flowers.
Giant Floradale	shades of red	2-3 feet	Should be grown as annuals in cold climates. Mexican species. Perennial in the South.
Sensation			
Rainbow			
Ruby King	red	3-4 feet	Propagated by cuttings.
Garnet			
Firebird			
<i>P. grandiflorus</i>	white to purple	2-4 feet	Dependable old standby. All of this group has grey glaucous foliage.
<i>P. secundiflorus</i>		18 inches	
<i>P. nitidus</i>	blue	6-8 inches	Early, hardy
<i>P. cobaea</i>	white to purple	2 feet	
			Arkansas cobaea
<i>P. fruticosus</i>	violet to purple	12-18 inches	Woody shrub-like plants for acid soil and plentiful moisture. Require good drainage
<i>P. newberryi</i>	dark red	8 inches	
<i>P. rupicola</i>	rose red pink to white	6-8 inches	

GROUNDCOVERS FOR COLORADO

By M. WALTER PESMAN

Periwinkle	<i>Vinca minor</i>
Bishopweed	<i>Aegopodium podagraria</i>
Bugleweed	<i>Ajuga reptans</i>
Stonecrop	<i>Sedum acre, S. album, S. Kamschaticum, etc.</i>
Ground Ivy	<i>Glechoma hederacea</i>
Buttercup	<i>Ranunculus repens</i>
English Ivy	<i>Hedera helix</i>
Kinnikinnick	<i>Arctostaphylos uva-ursi</i>
Snow-in-Summer	<i>Cerastium tementosum</i>
Moneywort	<i>Lysimachia nummularia</i>
Oregon Grape	<i>Berberis aquifolium repens</i>
Lily-of-the-Valley	<i>Convallaria majalis</i>
Ribbongrass	<i>Phalaris arundinacea picta</i>
Thyme	<i>Thymus serpyllum</i>
Pussytoes	<i>Antennaria rosea</i>
Native "verbena"	<i>Lippia canescens</i>
Violet	<i>Viola species</i>
Japanese Spurge	<i>Pachysandra terminalis</i>
Moss Pink	<i>Phlox subulata</i>
Native sage	<i>Artemisia frigida</i>
Hen-and-chicken	<i>Sempervivum brauni, rubicundum, etc.</i>
Catnip	<i>Nepeta mussini</i>
Portulacca (purslane)	<i>Portulaca grandiflorum</i>
Woodsorrel	<i>Oxalis corniculata atropurpurea</i>



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MINIATURE GOLF IN YOUR OWN BACK YARD

BY EDGAR A. JOHNSON
*Landscape Architect for
Parks and Recreation Department
City and County of Denver
Member, Rocky Mountain Chapter,
American Society of Landscape Architects*

DO YOU need something at home to keep those teen-agers occupied? When you have guests that include active young people do you wish you had some activity for them? Do you like to play golf, but don't have time for it? If you answer yes to any of these questions, then this article is for you.

How about making a miniature golf course in your yard? If you have kids, let them help plan it and help build it, and the planning and building can be fun for you, too.

The type of miniature golf course that I suggest will not spoil a bit of your landscaping. This is not one of those commercial types with 2 x 4 sides, gadgets, etc. The type I have in mind is a miniature golf course with grass fairways, grass tees, and greens, and with all the beauty of a regular golf course.

This miniature golf game is played with just a putter and regulation golf ball. For your course, all you need is a means of designating your tees, some holes sunk in the ground and some portable or permanent flags to mark the holes. For the fairways, just use your imagination and your yard as it is.

Any number of fairways can be used, although nine is the preferred number. Make the play interesting by providing some long shots, varied with short ones. Work in a dog-leg or two and make full use of any natural hazards such as garden pools, trees, shrubs, slopes, and any other features already in your yard. If you wish to go

all out you might add a sand trap or two or introduce some hazards, or tricky shots.

To protect your flowers, make it a rule that a ball landing in the flowers must be put back in play by moving it to the nearest grass area. For safety, apply the same rule to a ball going into the street. Whether or not you count this as a stroke is up to you.

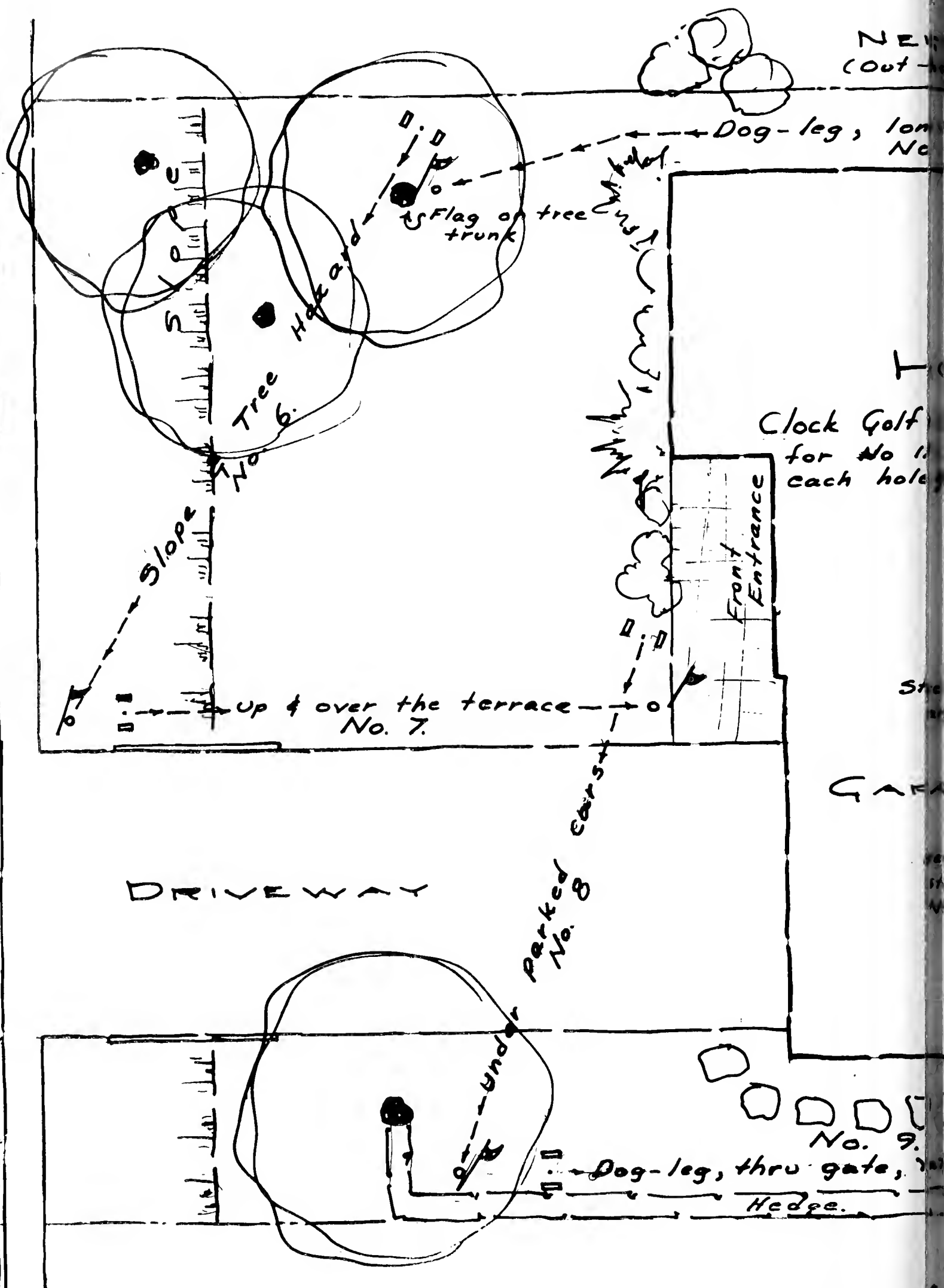
In laying out your course, it is usually well to have the first tee near your patio or similar convenient location or gathering place. Lay out the fairways around the yard with the last hole returning the player to near the starting point. It is best not to have fairways crossing each other if several groups wish to play one after the other as on a regular golf course, however, this is not essential.

To mark the tees, I suggest two bricks or short 2 x 4's set flush with the ground. Paint these with the number of the tee and an arrow showing the direction to the hole. As on a regular course the players tee off from between these markers. By setting these flush with the ground, they are inconspicuous and you can mow over them.

The hole can simply be a tin can set in the ground. It is well to cut both ends out to provide drainage. Short sections of galvanized pipe would be more permanent, but less available around the average home. Needless to say, these are set flush with the surface of the lawn.

If the holes can be located with a

STREET
(Out-of-Bounds)



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Flag on Fence

Short & Easy
No. 4.

UTILITY
YARD

Drive

Long Dog-leg
No. 3

GARDEN
(Out-of-Bounds)

Fence

PATIO

Start
End

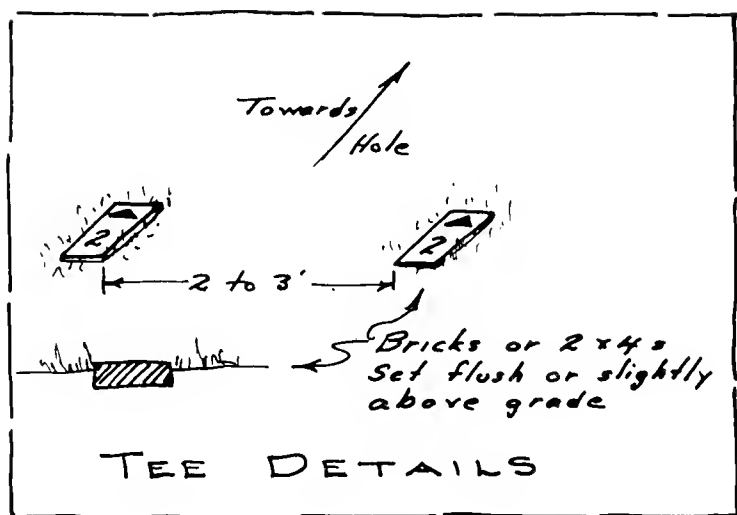
Pool

Water Hazard
No. 1

CLOCK
GOLF

FLOWERS
(Out-of-Bounds)

Fence



building, tree or fence directly behind them, the flags could be painted on these. Otherwise, I suggest a small flag mounted on a piece of $\frac{3}{8}$ inch rod about 30 inches long. I prefer to have a loop at the top so that these can be taken up and hung on a nail or hook. You may wish to just leave these in all summer. The flags are best if made of colored plastic material or cloth. Metal flags are satisfactory, but rather stiff looking.

You are now ready to play, have fun!

To add to the fun, why not add a clock golf putting green. Or, you may prefer this to the miniature golf course.

For clock golf, just use any area of your lawn that is 20 to 40 feet in diameter. Mark out a circle and divide it into 12 equal parts. Mark each of these segments with a brick or 2 x 4 set flush with the ground.

Now paint each of these with numbers from one to twelve. If you want to be real fancy you might set your

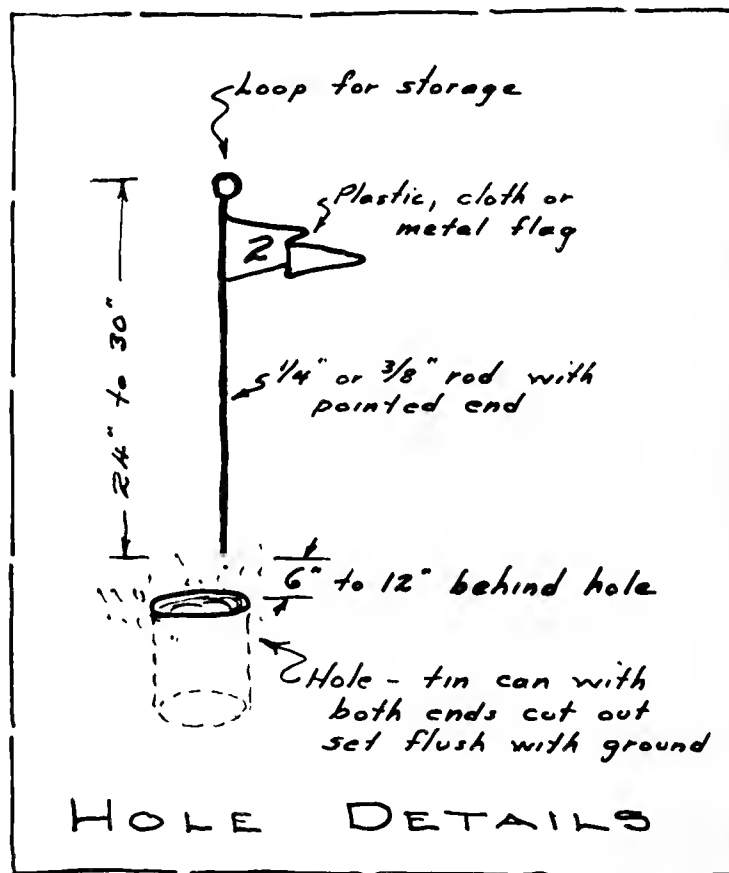
bricks to make them form Roman numerals.

Next, install a hole in the middle of this circle, but off-center. A tree, shrub or other obstacle can provide a hazard to make the game more interesting.

You are now ready to play, just start on marker number one and putt a golf ball into the hole, working progressively around the circle from 1 to 12.

Now, isn't this more fun than just sitting and looking at your flowers? If you have a good lawn and keep it close clipped you can even practice a little putting at home this way.

Even if you don't use either the miniature golf course or clock golf very much, think what a nice conversation piece it will make for your guests.



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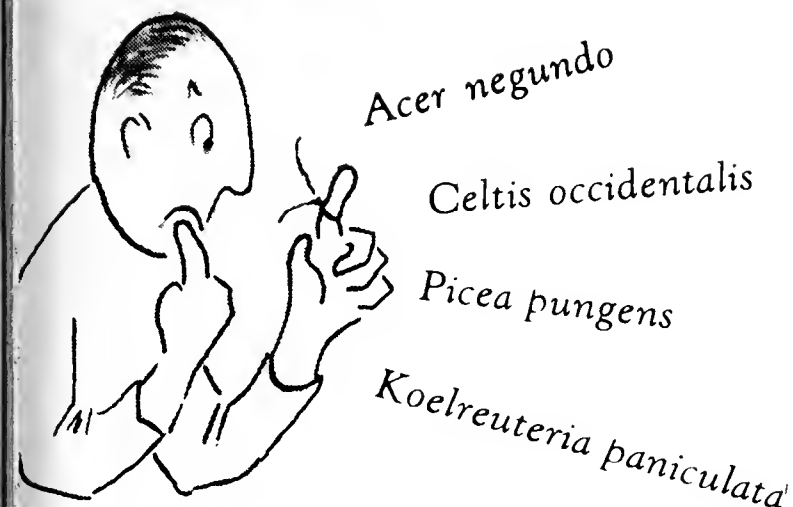
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WHAT'S IN A NAME? MUCH!

By M. WALTER PESMAN



YOU may be among those people who are abjectly scared of Latin names. One well-meaning "practical" gardener told me that she only knows two Latin names, *Aurora borealis* and *Delirium tremens*.

Another one (male) confessed that he has two or three names on tap that he uses whenever an inquisitive soul insists on finding out the botanical name of an intriguing plant—such as *Vauquelinia karwinskyi*,* and *Chaetoptelea** *papalote*. Since these names are hard to remember and difficult to spell, he gets by handsomely.

But isn't it sad, that the unjustified fear of Latin names makes us shy away from some utterly exquisite flowers that have come in recently and, poor things, have not been given any common name as yet. (They'll get them later, don't you worry!)

If you ever have an experience that has been mine again and again, of having to discourse about plants in an unknown language, you'll bless the fact that each plant, no matter where found or cultivated, has one handle that can be used (and is!) in any part of this wide world. Even if the pronunciation of, for instance, *Koelreuteria* disguises it as Ko-el-ray-oo-tay-reea, you'll recognize it on sight. What a blessing Latin names have been for

the global development of plant knowledge.

Linnaeus, a Swedish botanist, developed the method of naming a plant by giving each a double name, to indicate species and genus such as *Helianthus* (genus) *annuus* (species). That was in 1753. Since then any plant lover can make himself understood in regard to a certain plant by using that system. There is no question (well, hardly any question!) as to what plant is meant once the accepted Latin name is used.

The only difficulty may arise where the same plant was named twice by different people in different places. The first name that was properly recorded is to have precedence.

What can we do for the timid soul who has this "unjustified fear of Latin names"? All he needs to know is that practice makes perfect. Any worthwhile accomplishment takes a little effort to begin with.

A beginner in a foreign language can speed up his knowledge considerably by asking himself, in the new language, the name of everything he sees during the day. Do the same thing for plants and soon you'll have lost all fear. Suddenly you will find that you can use them just as easily as mince pie and hi-fi records.

Here is a beginning: American elm, *Ulmus americana*; Soft maple, *Acer saccharinum*; Boxelder, *Acer negundo*;

*The fact that these names belong to Mexican plants need not bother!

Hackberry, *Cletis occidentalis*; Blue spruce, *Picea pungens*; Common privet, *Ligustrum vulgare*; Flowering plum, *Prunus triloba*; Snowberry, *Symphoricarpos albus*; Lilac, *Syringa vulgaris*; Wayfaring tree, *Virburnum lantana*, etc.

Does that look scary? If it does, take another look. Both privet and lilac are indicated by *Vulgaris*, "common," naturally. The *pungent* fragrance of Blue spruce shows in the Latin name. *Americana* and *occidentalis*, for elm and hackberry are "naturals." Since *Prunus* stands for both plum and cherry, the *triloba* kind, of course, has three lobes of the leaf.

Now let us get quite bold and tackle a difficult name like *Sym-phori-carpos* for snowberry and coralberry. The first part *sym* occurs in sympathy and symphony, feeling or sounding *together*. Phor(i) we find in *phosphorus*, meaning light-bearing. *Carpus* occurs in many plant names for *fruit*: *monocarpus*, onefruited; *melanocarpa*, blackfruited as in *Prunus melanocarpa*, Chokecherry. The whole name then, that looks so forbidding simply means that the shrub *carries its fruit together*, that is, in bunches. Easy, isn't it?

Just in case you get to be really expert in the use of Latin names, there are two more good reasons for becoming glib at them. There is nothing quite

so "genteel," as quoting some Plant-Latin, we feel. This is a common thought among many folks, and you might as well make use of it, when it comes to creating a profound impression on others who have not yet acquired the ease.

No matter if you don't know anything else about a plant, but its name, people will jump at the conclusion that you are an expert, simply because of the high-sounding name. That is one reason for learning how. It may not be a highly moral reason.

The other is quite handy in cases where you need to blow off steam and run out of good expletives (I was going to say swear-words, but I thought better of it). For such a case try *Arctostaphylos uva-ursi*. You can put a great deal of feeling into it. For extremely difficult situations, like running out of gas in the middle of the desert, try *Metasequoia glyptostroboides*.

As a parting shot, the following. If you feel that Latin names are unnecessary, remember that certain plants have forty or more common names. You might have some difficulty finding the one that will be known to your particular friend-gardener.

Being able to call a plant by name, even a botanical name, makes you on more amicable terms with it. Try it.

The floral Butterfly planted annually at City Park is one of the few carpet beds being planted in Denver. This kind of planting is becoming a lost art in Denver. The bed requires about 6,600 various *Coleus* and *Alternantheras* plants for its design.

The planting is done by William Barrie, florist gardener of the City Park Greenhouse, assisted by William Withrow. It takes two days to plant the bed, and it must be trimmed every other week.—M. U.

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POISON HEMLOCK

During the latter part of June, in July and, in August, poison hemlock appears in many of our gardens, along roadsides and waste places, on rich, gravelly, or loamy soils. It is also called deadly hemlock or poison parsley. Its scientific name is *Conium maculatum*.

Conium maculatum, an introduced weed, is as delightful to the eye as Queen Anne's lace, which it resembles and to which it is closely related. Parsley and carrots are its relatives. But every part of the hemlock is poisonous. Its tiny seeds, sometimes eaten by children who mistake them for anise or caraway, nearly always prove fatal.

According to tradition, the poison-hemlock is the plant which furnished the "cup of death" given to Socrates in ancient Greece. It was formerly grown in the United States as a drug plant.

Conium maculatum grows four to ten feet high. The stem is dotted with purple marks. The plant has a mouse-like odor. The leaves are ternately compound, and finely cut. The winter rosettes of leaves are commonly mistaken for ferns. The flowers are small, delicate, white blossoms in large open compound umbels.

The plant is a biennial, reproducing by seeds. To destroy the plant cut the rosettes below the soil surface with a hoe. In the second season mow the tops before the seeds are formed.

Inspect your garden. Poison hemlock may be growing there.

K. B. C.

Visitors to Denver are given an extra welcome by the trees and hanging baskets in the downtown area. These additions of greenery were made possible through the efforts of David Abbott, and the Downtown Improvement Association. Their aim is to improve the appearance of this area and to make it a better place to shop.

The trees were planted and set on the streets by the Parks and Recreation Nursery. The City Park Greenhouse was responsible for putting up the baskets. All the expenses of this program are borne by the Downtown Improvement Association.—M. U.

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DENVER BOTANICAL GARDENS



A. Busy planting the Cactus Garden are Mrs. Julia Willis, Mr. Heacock, Mrs. Stiles, Mr. Tomlin, and Mrs. Heacock.



B. Mr. and Mrs. Heacock and Mrs. F. Stiles discuss the placement of cacti in the garden.

This past month another section of the Botanic Gardens got under way when members of the Colorado Cactiphyls began planting the Cacti and Succulent Garden. This initial planting is composed of native species of cacti collected by the Cactiphyles on several weekend excursions. This garden is located near the west end of the Herbaceous Unit.



C. Taking notes on the cactus planting is Mr. G. J. Tomlin.



The Rainbow Iris Collection in City Park is pictured at full bloom this Spring. This planting of 317 different varieties was recently transferred to 909 York Street so that newer and better iris could be planted at City Park in anticipation of the National Iris Meeting to be held here in 1963.



The Annual Plantings along the fence in front of the Gardens are in full bloom now and present a dazzling display. In this planting are 133 varieties of petunias and 51 varieties of marigolds.

COMPOSTING

By MRS. JOHN SCOTT

COLORADO FEDERATION OF GARDEN CLUBS

AUGUST is flower show month in this area. What with the weather taking unpredictable nips at our spring and fall seasons, chairmen feel uncertain about earlier or later show dates.

July has been slighted. We don't plant enough July bloomers to insure a procession of petals. We could and should do something about this. George Kelly's book, *How to Have Good Gardens in the Sunshine States*, lists these perennials and bulbs for July flowering: anchusa, anthemis, bellflower, cornflower, clematis, painted daisy, shasta daisy, tickseed, delphinium, pinks, bleeding heart, tuberous begonia, cushion mums, dahlia, foxglove, globe thistle, desertcandle, seaholly, four o'clock, gaillardia, geum, gladiolus, ornamental grass, babysbreath, daylily, coralbell, marsh mallow, hollyhock, plantain lily, candytuft, sweet pea, lily, flax, lupine, beebalm, evening primrose, iceland poppy, beardstongue, phlox, false dragonhead, balloon flower, polemonium, bistort, buttercup, goldenglow, tiger flower, viola. For more July shows in '61 get some of these in the soil soon.

Why be showered with shows in one month, August, when there are eleven other possibilities? Boulder has found Christmas shows rewarding. Any reason why Thanksgiving and Hallowe'en shouldn't show promise? The western slope chooses January, and has acquired an enviable reputation. Surely, February, March and April could be just as cooperative. Our shows are too concentrated. We need to thin dates.

We're out of balance in another respect, too. Sometimes our show personnel become a bit dictatorial. This is not inferring that authority shouldn't be centralized. But it does imply that

the mode (or mood) of exercising it should be softened.

A show is a club or community enterprise. Probably no one position or committee is superior to another in the final analysis. Sure, some get their pictures in the papers, sit at head tables, greet distinguished guests and make with a mike. The prime purpose, however, for giving a show is none of the above, but rather to promote horticulture, advance artistic design and educate the public.

Really, it's the exhibitor who makes the show. A show set-up is a little like the host (show officials) who sets a lovely table (place and time) and awaits the caterers (exhibitors) to bring the food for the guests (public). The management is a minority group, while the exhibitors are in the majority and certainly should have more consideration in a democratic country.

And especially the faithful exhibitors who annually tote in entries by the score, and never receive a blue ribbon. These are the backbone of any show. They are unselfish and unsung and unlucky.

Or are they lucky? Everyone dislikes a consistent winner, or even an occasional winner if the stakes are especially desirable. Yet, if such a (fortunate?) exhibitor later decides against competing (to give others an opportunity or because he is just plain poohed) said exhibitor is thought to be angry, afraid, slipping, disinterested or worse. It puts a different slant on that old adage "You can't win for losing."

So count yourself the winner if you persistently pick your best pink petunia and don't place. It was still beautiful (but not the newest variety); it filled



Mrs. B. A. Willets' arrangement,
"Padre of the Pueblo."

space (and full classes are counted blessings); some spectators thought it should have won and liked it much better than the petunias that wore ribbons in their ruffles; and all concerned considered you a good sport, a generous soul, a community-conscious individual, and other desirable attributes, all of which you are, and much more. You're a VIP.

Another VIP is Mrs. B. A. Willets, Denver. Her arrangement, "Padre of the Pueblo," won a place in National Council's new arrangement calendar to be released in August. Isabel credits an artist friend, Mrs. Claude Ryder, Vandalia, Ohio, with teaching her floral design. The plant materials depicting the austere life of the Southwest are: Ti leaves, and pods of the evening primrose, yucca and wild iris. Mrs. Willets is a student judge. Her photographer was Art Gore.

Continuing with very important people, we have Mrs. L. G. Clapp, Cheyenne, Wyo., who is a member of the Colorado Judges Council. Mrs. Clapp went to New York in June, the guest of Jackson & Perkins Co., and the Sterling Silversmiths of America. She was chosen to represent Wyoming at the fifth annual competition of the Sterling Bowl Tournament. She is a nice arranger and a nicer person.

Another person of national fame is Mrs. William H. Barton, National Chairman of Flower Show Schools, who will be the instructor for Colorado's first flower symposium, given Sept. 1-2. Mrs. Barton's course will emphasize "New Trends in Design—Distinction and Originality." Mrs. John R. Salois of Dallas, Texas, will demonstrate "Pointscoreing on Horticulture." For further information contact Mrs. L. J. Woodman, 3985 S. Pennsylvania, Englewood, Colo.

"The book of Nature is a book of Fate. She turns the gigantic pages . . . thousand ages, and a bit of slate; a thousand ages, and a measure of coal; thousand ages, and a layer of marl and mud."—Emerson, "Essay on Fate."

FIFTH WORLD FORESTRY CONGRESS STAMP

The 4-cent commemorative postage stamp marking the Fifth World Forestry Congress, which will be first placed on sale August 29, 1960, at Seattle, Washington, will feature the Congress seal, according to Postmaster General Arthur E. Summerfield.

This seal, in vertical format, features a globe in the upper portion, over which is imposed a stylized tree, flanked by symbols representing the multiple uses of forest land—wild life represented by a deer; water represented by a waterfall; timber harvesting represented by a stump and axe; outdoor recreation represented by a hiker, and grazing represented by a sheep. These resource uses are worldwide, though perhaps more widely developed in the United States than anywhere else. In an arc at the top of the seal is the inscription "FIFTH WORLD FORESTRY CONGRESS" in dark Roman lettering.

One modification was made — the actual seal included a dark inverted arc in which appeared "U.S.A.* 1960." This small segment was eliminated so that the value "4¢" and "U. S. POSTAGE" could be added across the bottom of the stamp design in dark Roman lettering.

In view of the fact that the Fifth World Forestry Congress seal was used, as noted, for the stamp design, no artist as such was involved. The stamp was modeled by Charles R. Chickering of the Bureau of Engraving and Printing.

The official emblem of the Fifth World Forestry Congress was designed jointly by Maurice H. Eysenburg of the Division of Visual Services, U. S. State Department, and Rudolph Wendelin of the Graphic Arts Division, U. S. Department of Agriculture.

The 4-cent World Forestry Congress commemorative stamp will measure 0.84 by 1.44 inches, arranged vertically, and will be printed in green on the Cottrell presses of the Bureau of Engraving and Printing, electric-eye perforated. Issuance will be in sheets of fifty, and an initial order for 120 million has been placed.

Collectors desiring first day cancellations of the 4-cent World Forestry Congress commemorative stamp may send addressed envelopes, together with remittance to cover the cost of the stamps to be affixed, to the Postmaster, Seattle 1, Washington.

A close-fitting enclosure of postal card thickness should be placed in each envelope and the flap either turned in or sealed. The envelope should be addressed low and as far to the left as possible since the stamp is vertical and the pictorial machine cancellation requires a space approximately 3¼ by 2¾ inches.

Envelopes submitted should be of the ordinary letter size and each must be properly addressed. An envelope must not be sent for the return of first-day covers, and orders for covers must not include requests for uncanceled stamps. The outside envelope to the Postmaster should be marked "First-day Covers 4-cent World Forestry Congress stamp."

Postmaster General Summerfield, in the initial announcement of this stamp on October 24, 1959, noted, "Approximately 2,000 foresters from all over the world will attend this Congress in Seattle to discuss opportunities to make each forest area yield the combination of uses best suited to the needs of the people. The United States is serving as host for this important conservation Congress, which is spon-

sored by the Food and Agriculture Organization of the United Nations."

More than 60 nations are expected to participate in the Fifth World Forestry Congress according to Dr. Richard E. McArdle, Chairman of the Organizing Committee and Chief of USDA's Forest Service. "There is every indication that it will be the largest international gathering of foresters ever held," he said.

The Congress will hear technical papers by 200 internationally known experts on forestry subjects. Seven tours are scheduled to cover major forest areas of the country.

"Multiple Use of Forest Lands," theme of the Fifth World Forestry Congress is symbolized by the official emblem which appears on the com-

memorative U. S. postage stamp. "Forest and related areas," Dr. McArdle declared, "should be managed in a manner that will conserve the basic land resource while at the same time producing high-level sustained yields of water, timber, recreation, forage, and wildlife harmoniously blended for the use and benefit of the greatest number of people. The multiple purpose use of forest lands has worldwide application."

The Congress seeks to stimulate and foster international cooperation in the proper development and use of the world's forest resources through the Multiple Use concept and through the exchange of information and development of personal associations among the world's foresters.

Visitors are welcome to visit the annual flower trials at the Colorado State University Horticultural Farm northwest of Fort Collins. The farm is located on U. S. Highway 87 approximately two miles north of the cloverleaf or traffic circle where U. S. Highway 87 and State Highway 14 cross east of Fort Collins. A guide to the staked plots can be secured at the residence on the farm.

The plots include 50 different varieties of multiflora and grandiflora Petunias. Many of these are All-America selections; some that are on trial undoubtedly will be; all are favorites.

The plots also include the new F_1 hybrid garden Snapdragons including the Rockets and others in solid colors and mixtures. Miscellaneous annuals in the test garden include F_1 Zinnias, Alyssum, Phlox, Verbena, Salvia, Celosia, Harvest Giant Garden Mums and double Hollyhock.

It is believed that the first Tuberous Begonias planted on a large scale in Denver were at Elitch's Gardens in 1931.

It is well worth the time spent to see the Begonias and other beautiful flowers at Elitch's, for all who see them will enjoy them.—M. U.

MARSHALL NURSERIES

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Photo courtesy Owens-Corning Fiberglas Corporation.

STRETCH YOUR HOME

THE ATTRACTIVE screened-in patio shown in the accompanying photos is a fine example of what can be done by a homeowner of average do-it-yourself ability, provided he has a firm plan and goes about it methodically.

This man is probably typical of thousands of owners of moderately-sized homes who have discovered that to accommodate the physical needs of a growing family (and for more peace of mind) the original living area simply must be expanded. He decided that a screened-in patio would add greatly to the comfort of all concerned and, at the same time, increase the value of his home. Such an "outdoor living room" can be used when entertaining guests, serving family meals, staging children's parties, or as a protected

play area on rainy days, or even for sleeping under the stars.

The builder of this particular patio, which is 12 x 21 feet, worked at a leisurely pace during weekends, days off and evenings, but the same patio could be put up in a couple of weekends, even less, if you already have a concrete slab.

Here's how he did it, all for approximately \$500:

First, he had a concrete slab poured. This cost him \$135 for materials and labor. You can save the labor cost by doing the slab work yourself, but it's a pretty back-breaking job. One thing to remember no matter who does the work: Provide adequate drainage away from the house. Also, concrete footers for the slab must be below the frost line for the area in which you live.

From that point on, our man did everything himself.

He placed natural slate in the concrete before it cured, to create a more attractive floor. Once the slate was set, a thin mixture of cement and fine sand was used to fill in between the slates.

He sank creosoted 4" x 4" posts in the uncured concrete (any wood going below ground level should be creosoted, whether it goes directly into the earth or not). To take the screening later, he sank 2" x 4" posts in the concrete midway between each 4" x 4" post, and also placed 2" x 4" base plates on top of the concrete between each post.

He nailed 4" x 4" framing across the tops of the posts the length of the patio. He then secured 2" x 6" rafters to the roof of the house and the top of the 4" x 4" framing, and nailed a 1" x 6" face plate against the outside of the 4" x 4" framing the length of the patio.

He then nailed corrugated Fiberglass-reinforced plastic panels to the 2" x 6" rafters, after placing longitudinal and corrugated wood filler strips over the rafters and in alignment with the corrugations of the panels.

Next, he used Fiberglass screening in 5 and 6-foot widths, tacking it (or you can staple) to the posts about every inch. This screening won't rot, rust, corrode or dent, and is glare-free. Framing strips of wood were used to cover up the tacks and give a trim appearance.

Ventilation just under the roof is important, so this homeowner fashioned a lattice effect using wood slats 1½" wide and ¼" thick at each end of the patio. It lets air through and at the same time gives a decorative effect.

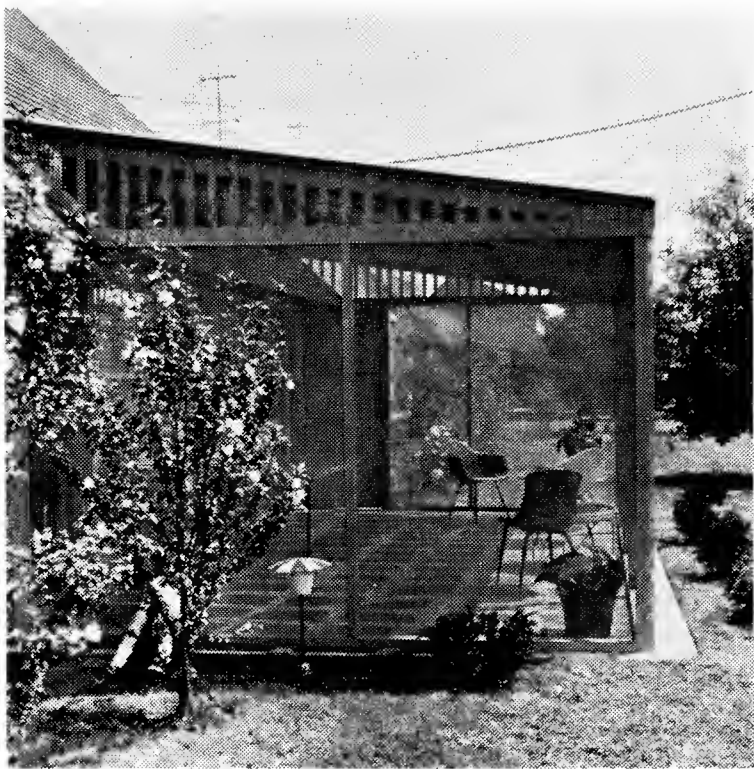


Photo courtesy Owens-Corning Fiberglas Corporation.

HERE'S A LIST OF THE MATERIALS HE USED AND WHAT THEY COST HIM:

Material	Cost
Fiberglas panels—seven pieces 12' x 40" 8 oz. 2½" x ½" corrugated)	\$200.00
Longitudinal and corrugated wood filler strips — 170 linear feet.....	17.00
Aluminum end flashing — 22 linear feet ..	3.00
Rafters — 8 pieces 2" x 6" x 12'	13.00
Cross rafters 2" x 4" (42')	3.75
Cross plate — 4" x 4" (21') to set on top posts	4.20
Face Plate — 1" x 6" (21')	2.10
Posts — 4" x 4" x 8' (4 pieces)	6.40
Posts — 2" x 4" x 8' (6 pieces)	4.30
Sill plates — 2" x 4" (two 10-foot pieces, two 12-foot pieces)	4.00
Top joist (roof to post) — 2" x 4" (two 12-foot pieces)	2.15
Natural slate — 105 pieces	20.00
Fiberglas screening — 5' wide x 55' long, 6' wide x 20' long	43.50
Facing strips for screening — 1½" x ¼" (220 feet)	7.70
Slats for squaring off each end — 1½" x ¼" (90 feet)	3.15
Screening tacks	1.50
Screen door — 3' x 6' 6"	30.00
Nails	2.00
Total	\$367.75

The parking lot at the Central Bank Building, 17th and Lawrence, is another spot of beauty in the downtown Denver area. The lot is planted with grass, trees, and rock gardens with flowers. Pause a moment your next trip downtown and really look at this beautiful planting. You'll be glad you did.

M. U.

PLANT DOCTOR HONORED

Dr. Cynthia Westcott, Glen Ridge, New Jersey, received the highest award of the American Rose Society, the Gold Honor Medal, during the Society's 61st Annual Convention in Denver, Colorado. "The Plant Doctor" as she is known to the gardening world is the author of numerous books on insects, diseases and roses. She is the second woman to be honored with this Medal in the 61 years of the Society.

J. Benjamin Williams of Silver Spring, Maryland, was the first recipient of the Helene Schoen Consulting Rosarian Trophy. He was selected for this award from 490 contestants for his superior services as a rose lecturer, cultural demonstrator and organizer.

The grandiflora rose *Queen Elizabeth* and the originator, Dr. Walter E. Lammerts of Germain's, Livermore, California, received the Gold Certificate of the American Rose Society. *Tiffany*, a hybrid tea rose, was awarded the Silver Certificate received by the hybridist, Robert Lindquist of Howards of Hemet, Hemet, California.

In stiff competition at the National Rose Show held in the Denver U.S. National Bank Building the following awards were won:

Nicholson Bowl, 7 different hybrid tea varieties, by Roy T. Littlejohn, Wheat Ridge, Colorado.

J. Horace McFarland National Trophy for which 6 different varieties of hybrid teas were in competition, was won by J. R. Burningham, Bountiful, Utah. He also won the J. Horace McFarland Rocky Mountain District Trophy (5 different varieties of hybrid teas) and the new Duke of Warwick Urn in competition for the first time. This urn was a gift to the American Rose Society by the All-America Rose Selections and the competition consisted of 6 AARS winners 1941 to date.

A new award, the C. Eugene Pfister Memorial Trophy in competition for one grandiflora was won by Mrs. Jean Kenneally, San Diego, California.

The Nora Katherman Rose Arrangement Trophy was won by Mrs. John Scott, Englewood, Colorado.

BIRDS ARE HELPERS

A bird can be worth a hundred dollars a year or more to a gardener, according to reports. A yellow throated warbler can eat as many as 10,000 tree lice in one day. The appetite of most other birds is equally insatiable. A single chickadee has been known to destroy 100,000 canker worm eggs in two weeks, plus thousands of tent caterpillar moth eggs. A kildeer can eat more than 300 mosquito larvae in a single meal.

—Farm News Digest

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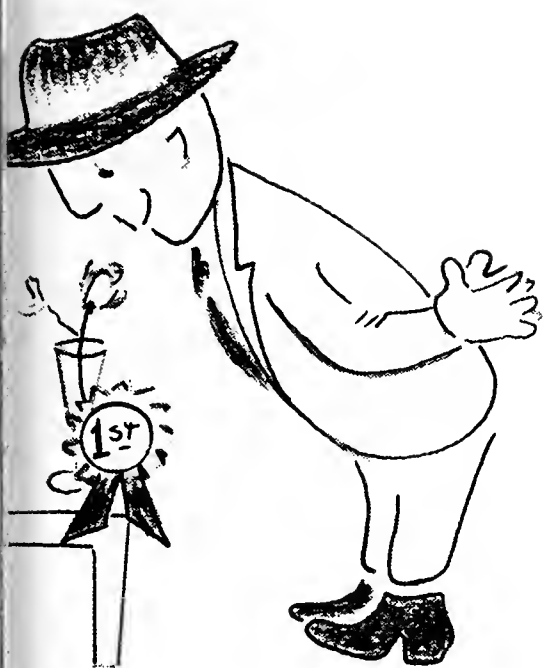
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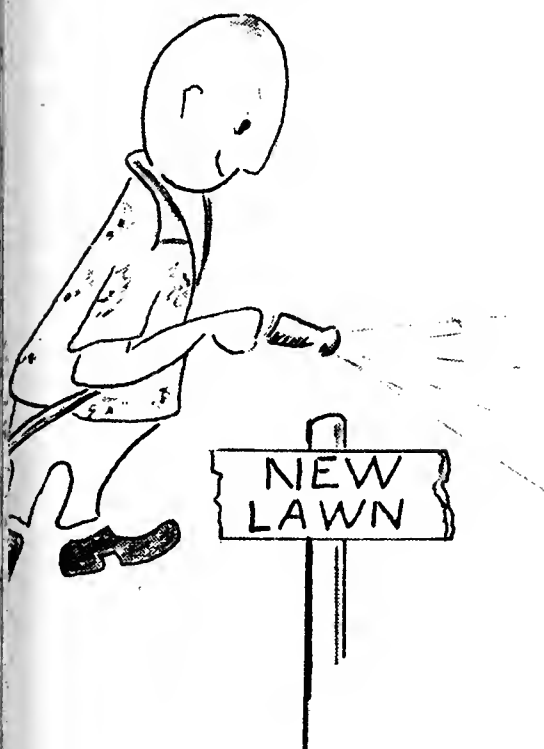


Seasonal Suggestions



FLOWER SHOW

August is a time for flower shows and county fairs. These activities add to the pleasures of gardening by permitting the gardener to exhibit his best fruits, vegetables and flowers. It also gives him an opportunity to share his garden with those who view these shows. Speaking of sharing your garden, brings to mind a remark our good friend Dr. A. A. Hermann has made many times, "What good is a garden if it's not shared with others?" May we suggest that you take advantage of these pleasant August evenings to entertain your friends and neighbors in your garden. You'll find that a lovely garden, a good meal from the charcoal grill and the informality are all conducive to pleasant and lasting friendships.



At this time of year good grooming is very important to keeping the garden in top shape. Shallow cultivation of shrub borders and flower beds adds much to the appearance and it is helpful in keeping down the weeds and conserving moisture. Faded blossoms are unsightly. Cutting them off before they go to seed will help promote more flowering on most plants. Roses particularly should have the faded blooms removed. A good rule of thumb is to cut back to the first strong leaf with five leaflets. Formal hedges should be shaped occasionally to keep them in bounds, and sucker shoots should be removed from shrubs and small trees. Suckers are easily recognized by their fast growth and abnormal sized leaves.

FERTILIZE OLD LAWN



Another important phase of grooming is being able to recognize the early signs of insect damage and controlling them before the damage becomes too extensive. Check the foliage of your plants frequently. Holes in the leaves or along the margins indicate the presence of chewing insects like beetles, grasshoppers and caterpillars, all of which can be controlled with DDT, Chlorodane, Dieldrin or a Multipurpose spray. Discolored foliage on the older parts of a plant is a good indication of spider mite damage. This can be controlled with Malathion or any of the mite-acides such as Aramite, Tedion, and others. Aphids are usually found on new succulent growth, Malathion or Nicotine Sulphate will clean up this pest. Small trees and shrubs can be adequately sprayed with a hose attachment or a pressure tank type sprayer. Many of the larger dense



RIP TO MOUNTAINS



Question: When tulip bulbs are being moved, can they be replanted immediately, or must they be allowed to dry until fall?

Answer: They may be replanted immediately. However, it will not hurt them to stay out of the ground if this is more convenient.

evergreens and big trees will require the service of a commercial sprayer if thorough and lasting control is to be effected.

New lawns and the patching of old lawns can be done now. Use the first part of the month for soil preparation. Buy cheap seed if you will, but don't skimp on the seed bed. A good 90% of the lawn problems we've had in the past few years can be traced back to improper preparation. Incorporate at least 2 yards of manure or other organic matter per 1000 square feet, and plow or dig it in 8 to 10 inches deep. When this is done, grade and level, making sure that the grade is away from the house. Time has shown us that mixed seed is not necessary in our area. If you want a good lawn, use straight Kentucky Blue or Marion Kentucky Blue. A top dressing of peat moss is good insurance since it retains moisture and will help in keeping the seed moist during germination. Newly seeded areas should be sprinkled frequently to keep the surface moist. When most of the grass has sprouted, begin watering more thoroughly and less frequently. In an old lawn that needs patching it is easiest to take sod from one area and repair all the bare spots with it. Then you need reseed only one spot.

August is also a good time to spend a weekend in the mountains seeing many of our beautiful wild flowers. Dr. Shubert's report on the wild flower count of last year, page 239, indicates that they are still quite numerous at this time of year.

P.S. Don't forget to attend a flower show or two. See the Calendar of Events for times and places.

—PAT

Question: Is there a purple-leaved plum which does not grow as tall and straight as the Newport purple-leaved plum?

Answer: Hanson purple-leaved plum, *Prunus cistena*, is lower-growing and somewhat more spreading than Newport plum. This is a very useful shrub where color contrast is desired.

Question: Is there an ivy that stays green all winter?

Answer: The English Ivy, *Hedera helix*, remains essentially green all winter. This is a useful ground cover plant under shrubs and in other somewhat shady places.

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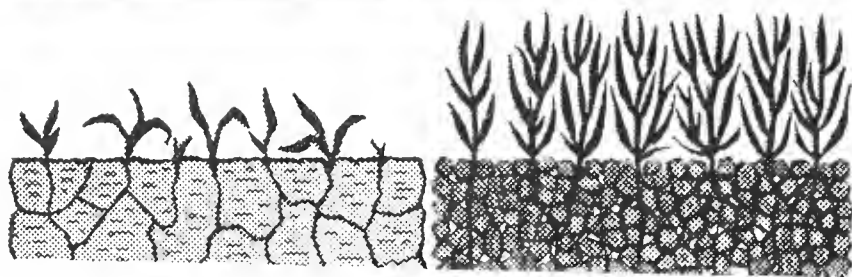
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The Green Thumb

Magazine for Rocky Mountain Gardeners



ALL LAWN
REPAIR TIME
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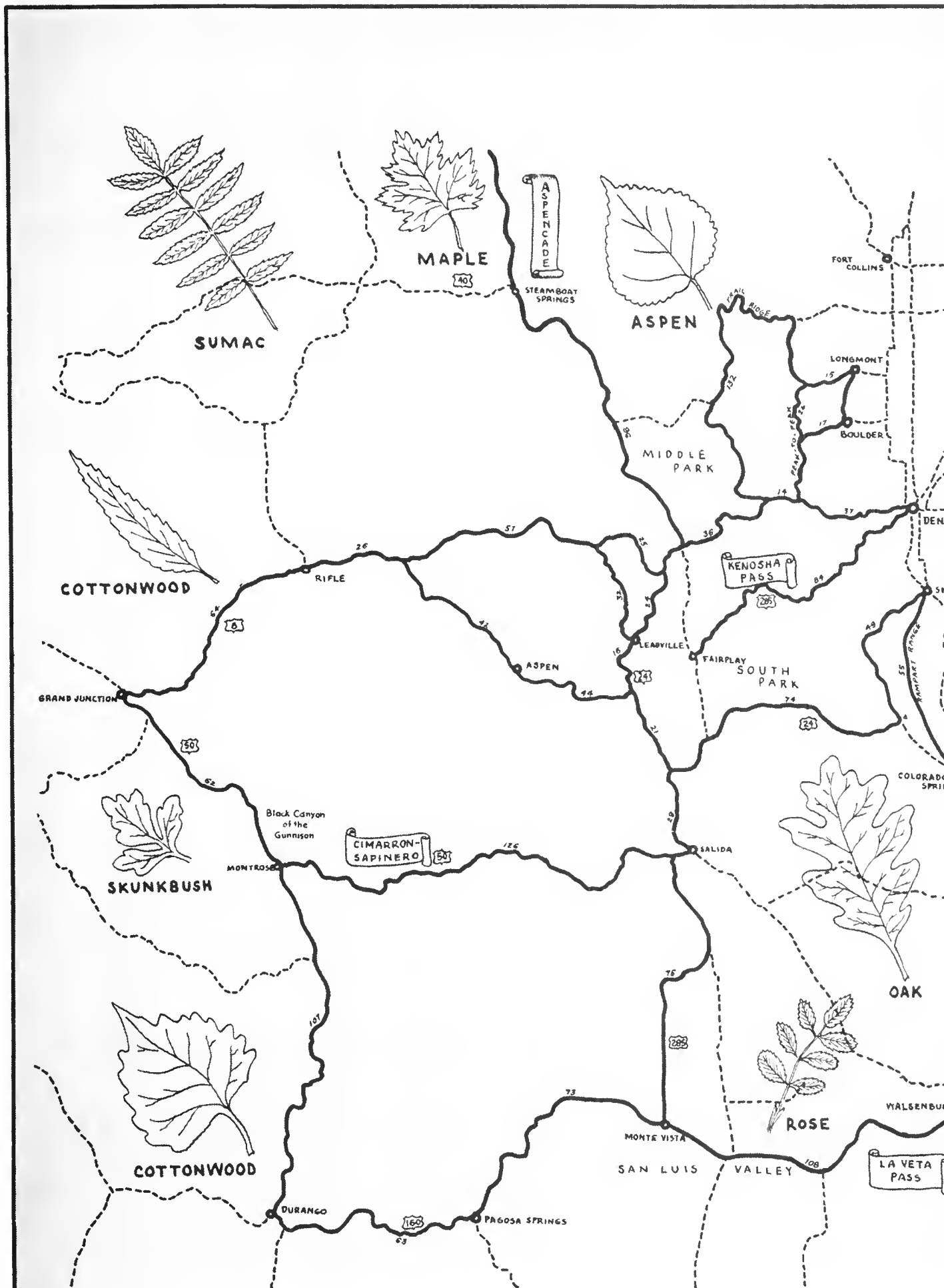
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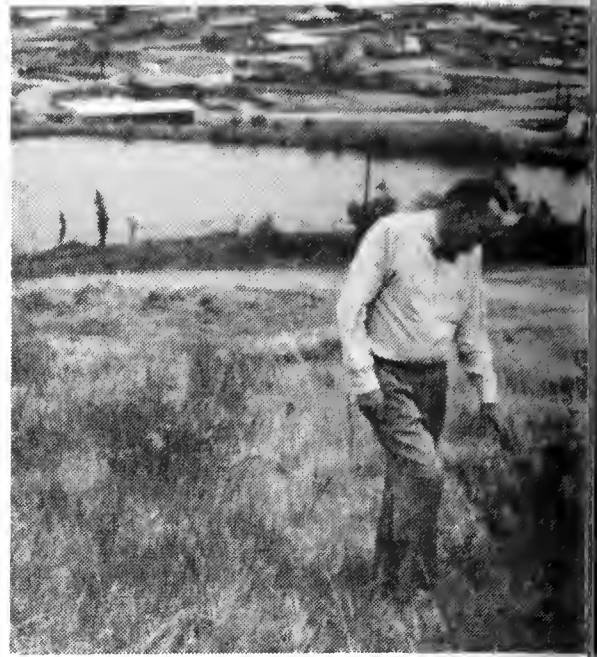
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THE ORIGINAL Applewood Mesa



Myron Bunger examines a Mountain hogany shrub on the slopes of Applewood Mesa.

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SEPT.-OCT.
Vol. 17
No. 8

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The Green Thumb

Colorado Forestry and Horticulture Association
Organized in 1884

"To preserve the natural beauty of Colorado; to protect the forests; to encourage proper maintenance and additional planting of trees, shrubs and gardens; to make available correct information regarding forestry, horticultural practices and plants best suited to the climate; and to coordinate the knowledge and experience of foresters, horticulturists and gardeners for their mutual benefit."

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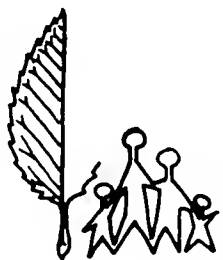
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MEMO

Calendar of Events

The Green Thumb Program—Every Saturday morning on KLZ at 10:15 a.m.

Floral Art Courses — Opportunity School. Every Thursday, 9 a.m.-11:30 a.m., 1 p.m.-3:30 p.m., 6:30 p.m.-9:15 p.m. There is no charge except for materials.

FUN WITH FLOWERS

Workshop I—Botanic Gardens House, 909 York Street, 10:00 a.m., the third Wednesday of each month.

Workshop II—Lakeside Denver Dry Goods, 44th and Harlan, 10 a.m., the first Friday of each month.

Workshop III—Arapahoe County Fair Grounds, Littleton, 9:30 a.m., the third Tuesday of each month.

Colorado State University Horticulture Show, "The Leaf in Your Life." November 5, 10 a.m. to 11 p.m., Large Ballroom, Student Union Building, CSU Campus, Fort Collins.

Cheesman Park Garden Club, October 26, 1 p.m., home of Mrs. Harry Noel, 6530 West 26th, Denver.

BOTANIC GARDENS HOUSE MEETINGS

909 York Street

September 21—Fun With Flowers Workshop I, 10 a.m.

Golden Bells Garden Club, 2 p.m.

September 22—Civic Garden Club, 1 p.m.

September 28—Hudson Garden Club, 1:30 p.m.

October 4—Mountain View Garden Club, 1 p.m.

The Green Thumb Editorial Board, 2 p.m.

October 5—Botany Club, 7:30 p.m.

October 6—Orchid Society, 7:45 p.m.

October 10—Judges' Council, 10 a.m.

October 11—Evergreen Garden Club, 7:30 p.m.

October 12—Organic Gardeners, 8 p.m.

October 13—Washington Park Garden Club, 1 p.m.

Rose Society, 7:30 p.m.

October 14—Colorado Forestry and Horticulture Association Finance Committee, 1:30 a.m.

Colorado Forestry and Horticulture Association Board Luncheon, 11:30 a.m.

October 18—Sloans Lake Garden Club, 12 noon.

October 19—Fun With Flowers Workshop I, 10 a.m.

Golden Bells Garden Club, 2 p.m.

October 27—Civic Garden Club, 1 p.m.

ATTENTION ASSOCIATION MEMBERS

ATTEND OUR ANNUAL PICNIC

Place: Botanical Gardens House, 909 York Street

Date: Saturday, September 24, 4:30 P.M.

Bring Your Own Picnic Lunch

Coffee and Ice Cream will be Furnished by the Association

Program and Entertainment

George Kelly will Show Slides and Tell of His Latest Trips After Which There Will Be a Community Sing.

NATURE DOES NOT PLANT THINGS IN ROWS—OR NATURALISTIC SPRING BULBS

By M. WALTER PESMAN, *Landscape Architect*

“SHOULD a garden be an improvement over Nature?” This is a question that has bothered garden lovers ever since the “naturalistic” type of landscaping was first proposed in the beginning of the eighteenth century. Not until man perceived the beauty of nature did our gardens change from straight lines, formal planting, and man-made designs.

This appreciation of nature “in the raw” came to the Orient much, much earlier, as reported by the monk Odoric, who went to China in 1325. England was the first country to apply it in its gardens, and now most countries have both “formal” and “informal” gardens. It is mostly a matter of degree: to what extent is our garden predominantly “man-made”; where do we allow nature to take the lead?

Tulips and other spring-flowering bulbs have mostly been used in formal beds, planted at set distances. Even when planted in so-called informal borders — in drifts — the general effect is man-made. How can we achieve a more natural result?



There is a much-quoted method for planting in line with nature's arrangement. Applied to tulip bulbs, for instance, it goes like this: gather up fifty or more bulbs in a wicker basket, stand close to the place where you want them planted, then with a deft semi-circular motion throw them all out in one zoop, and plant each one exactly where it lands. Some will fall close together, others will roll on for a distance, the farthest ones may be very scattered; no matter, that is the way nature itself scatters its seeds and plants. It will be effective.

Don't worry if some bulbs are crowded, let them come up like that. (Did you ever examine carefully how nature's own “drifts” are made up?)

Incidentally, this method of planting is quite satisfactory to the artist-gardener, who insists that his flowers be arranged in the garden with the same nice feeling as they would be in a table arrangement. A “drift” in the flower border corresponds to the “spray” idea in an unsymmetrical bouquet.

Carrying through this same idea, why not have a “repeat” in your de-

sign: the same tulip might be used in two or three spots, with the proviso that the spots are of varying size and shape. It catches the eye pleasantly and it provides color without monotony.

So far we have talked about bulbs in the border. There is no reason why they should be confined to the border proper. Some of the most satisfying effects can be had by groups of bulbs that seem to come up as volunteers in the most unexpected places. I am reminded of a little cluster of Clara Butt tulips that peeked around a few spirea bushes, most effectively. And where was it that I saw a compost heap virtually invaded by an army of grape hyacinths?



Siberian Squills

One of the most grateful bulbs in this naturalizing is the little Siberian squill (*Scilla sibirica*). Once you have it started it will spread in the inimitable manner of nature. I planted a few among a neglected shrub bor-

der of coralberries, Japanese barberries and Flowering Almond. The first year I was careful not to disturb them. Now I pay them no heed and they have spread over a radius of twenty feet. Evidently their seed is actually propelled on ripening, at least it is coming up in the most unexpected places just where I want them most. Shade seems to be no obstacle, since it comes out so early in spring.

Much more difficult to get established, but eminently worth the trouble, is our Snowdrop (*Galanthus nivalis*). It must have shade even in less sunny climes, and in Colorado is not too happy unless it is planted in a woodsy area, possibly with some soil acidity.

Once we have had success with this idea of acclimatization of bulbs, we are prone to try it with various kinds of bulbs. Usually the result is good—as long as we keep our good common sense. I'll never forget one case where I was carried away with the idea of a large mass of yellow daffodils in a naturalistic setting, among cottonwoods. The fact is I had seen beautiful pictures illustrating just that. It was like a dream,—that is, the picture was.

Our reality was devoid of all satisfaction. Yes, the daffodils came up, hundreds of them. But just at the time they were at their best,—here were not hundreds, but thousands of dandelions competing with them: the same color, the same season. I found out how a dog feels when he slinks away with his tail tucked in.

Another nice idea in theory does not work out too well in reality, namely dotting a lawn with crocus, in the pleasant English manner. It works all right for one spring in Colorado. We are too lawn-minded here to allow our crocus to complete their



Group of Crocus

growth in an unmowed lawn, as they do in England. Keeping the lawn trim cuts the crocus foliage and the new bulb does not have time to form. The result is that we have to add another couple of hundred the next fall if we want to realize the picture in our mind. That is rather expensive.

On the other hand, scattering crocus at various odd spots is most soul-satisfying. Those first yellow crocus suddenly appearing are making us feel that spring is right around the corner. Then come the dark purple and the other colors, one after the other. Except in the lawn, they'll complete their growth and the foliage will disappear without being noticed. (That is where a narcissus is less accommodating; even if we tie up the ripening foliage in neat bunches, it is far from inconspicuous in a flower border.)

Before mentioning the scores of other less-known spring bulbs, let us

come back to our tulips and narcissus, the good old stand-bys.

It is true that they can be used for staid borders,—the early low tulips are particularly good for that. On the other hand, the naturalistic planting has unlimited possibilities.

I remember one satisfactory planting of tulips where the colors and sizes had been so carefully chosen as to make a perfect gradation from low creamy and yellow, through the medium-sized pinks and reds to the tallest breeders with the dark maroons, mahoganies, and metallic purples. To make it a success, intimate knowledge of the varieties is needed.

Luckily there are few color clashes among tulips! Even the gorgeous Red Emperor is not too difficult to blend with others. (But why not give it a spot all to itself?)

Lately the so-called "botanical tulips" or "tulip species" are beginning to show up in our gardens. They fit our dry climate, since many of them



Left to right, *Kolpakowskyana*—*Turkestanica*—*Biflora*

come from dry sunny locations in Asia Minor, Greece, Central Asia, and similar places. Put them in the rock-garden or in warm nooks. Some are merely “cute”, others most striking.

Close to two hundred tulip species have been described. Some of the common ones now in the trade are *Tulipa clusiana*, sometimes called “Candystick”; *Tulipa kauffmanniana* or Waterlily tulip; earliest of all, *T. eichleri* with large red flowers and yellow and black center; *T. biflora* with twin-flowers (white); *T. saxatilis* or Cliff Tulip another twinner

with wide-open lilac flowers showing a yellow sun in center; *T. acuminata* or Turkish Tulip with spider-like, yellow-orange blooms; *T. persica* (patens); *T. turkestanica*; *T. kolpakowskyana* — all named after the place they came from originally—and many others.

If you want to get an idea of the multiplicity of these types, take a look at Wayside Gardens’ latest catalog. They are shown in color.

Even narcissus has gone in for species. Most of them are smaller and particularly good for rock gardens, some highly amusing.



Left to right, *Persica*—*Saxatilis*—*Acuminata*

The following narcissus species are now in the trade: *N. bulbocodium* or Petticoat Daffodil (should be quite popular now that petticoats have re-



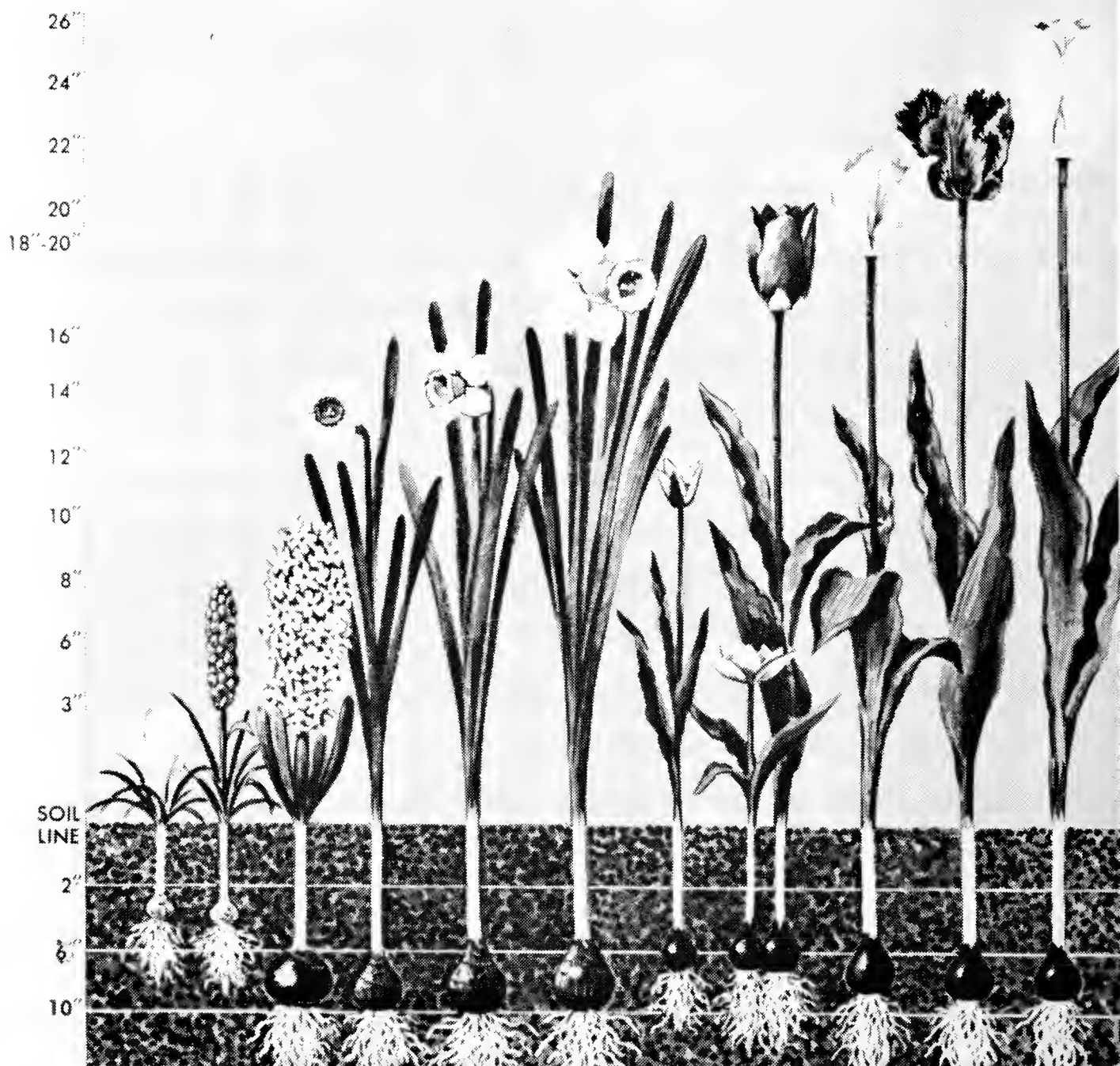
Narcissus

turned); *N. juncifolius*, with narrow leaves; *N. Triandrus*, known as Angels-Tears, and of course, *N. jonquilla*, the fragrant Jonquil with a number of flowers on one stalk.

(It will take constant hammering on gardeners to make us remember that a jonquil is not the same as a daffodil, but that both are called narcissus).

If you are interested in the numerous spring bulbs,—and who isn't once you have seen them—try them in your garden.

All of them are best in irregular plantings, for — “nature does not plant things in rows”.



Save this handy fall planting guide and follow it carefully for best results in planting your bulbs this fall. Left to right: Crocus, Grape Hyacinths, Daffodils (Small Cup, Large Cup, and Trumpet. Tulips: *Tulipa clausiana*, *Dasystemon*, *Fosteriana*, *Triumph*, *Parrot*, and *Darwin*.



FALL LAWN REPAIR TIME

BY HERBERT C. GUNDELL

Denver County Agricultural Agent

Your beautiful green lawn, like so many other component parts of your garden and home development, is a living, growing organism that requires occasional care, proper treatment and frequent repair to remain at its very beautiful best. In a sense, it could be compared to wall-to-wall carpeting of your living and dining area—except of course in the garden it becomes fence-to-fence rather than wall-to-wall property.

Nevertheless, it is that portion and setting of your garden which perhaps from the standpoint of appearance, should be as nearly the same through the years as possible, while the other component parts (the trees, shrubs and flowers) steadily change, increase in size, beauty and color and in flowering season.

Fall is a very good time to do this repair work on your lawn. First of all, there are few other garden activities competing for your time and attention. Secondly, the mending and repair work that you can do now will save you and will be so much better established in the spring than if you postpone this activity until perhaps mid-April of the following garden season. One of the most important jobs that needs attention in the fall is the actual replacement of turf in certain areas where it has either become worn or it otherwise was lost due to disease or mechanical injuries. Such turf areas would normally invite you to do a job of reseeding, and in most ordinary circumstances,

reseeding of an area is a very good practice and one which has been employed by gardeners in the Rocky Mountain area for years and years, with great success.

The difficulty, however, in reseeding a worn area is not so much in re-establishing turf in itself as it is really in re-establishing turf that will last out another growing season and will successfully leaf out again the following year. Many people in the metropolitan area of Denver have reseeded certain portions of their garden year in and year out with never-ending patience without ever reaching this goal of re-establishment of their lost piece of grass. So actually, the job is not alone in reseeding an area, but there is more to it than that as we shall see henceforth.

To begin with, when a piece of turf is lost, there must be a cause for this loss. And unless we determine the cause and correct it, the re-establishment of a lost grass area is very much in doubt. The second problem that I see in reseeding an area in your lawn is due to the fact that after we seed this area, we must give it the same kind of care for about two weeks as if it were a brand new lawn to be established for the first time on virgin soil. In other words, you have quite a job on your hands in watering and general maintenance to be sure that this young seedling grass is going to make a mature plant before freezing weather sets in.

Here is where many people fall down, as they are not prepared to give

a seeded area the care that it really ought to have.

This brings me to my next point in lawn repair, and that is re-sodding. Re-sodding is a new term or a new activity in this area, and has just come to the foreground in the most recent year or two because it makes very good sense — at least to me. By this time, many garden supply shops and seed stores in the Denver area will be selling Bluegrass sod by the roll or by the square foot at a reasonable price, a price which you can well afford considering the time and labor-saving that is involved in acquiring already established sod. Now, there was a time when we used to say that sod had to have six to eight inches of roots under it to be good sod. This, however, has been proven an erroneous idea. Actually, research has shown that sod no thicker than an inch and one-half, including the grass tops, the crown and the roots is perfectly capable of establishing itself adequately in a reasonably short time and will render years of useful service to the owner where it has become established.

The beauty of re-sodding over re-seeding is the fact that all we really have to do is remove a square of trouble, turn the soil enough so that some mechanical tilling of the soil occurs, and then fit a customized piece of sod, cut to measure, into the spot from which we have removed the worn out grass. Then roll it or tamp it down well so that the roots are in excellent contact with the soil, and water it daily for about a week or so.

Another item that I think deserves your attention at this time of the year is the installation of labor-saving devices that will be very handy to you in years to come. Personally, I can think of no greater labor-saving device in the garden than metal edging around your flower beds. I find this

particular item of installation perhaps somewhat expensive when you apply it to a large garden, but in the long run, the amount of time you save each week in maintaining your garden and its beauty at its very best is worth many times the cost of acquisition of your metallic or plastic edging.

Edging is made in various types of materials as I have already mentioned. Also it comes in various widths. The most popular today is aluminum and galvanized steel edging in 4 inch widths. Also gaining in popularity are the plastic materials and rubberized materials — even gypsum-type materials are now available for this purpose. But I have found from experience that in a healthy lawn, a 4-inch width is nothing more than a small barrier but certainly not a sufficiently large obstacle for the roots to stay on one side without creeping underneath to the other. In other words, unless your edging is sufficiently deep in the sod to hold the roots on one side, the purpose is largely defeated and the installation is only partially successful.

In my own experience, 6 inch corrugated galvanized steel edging has worked the best, and it seems to hold the grass on the one side fairly well. There still is an occasional rhizome which comes underneath which certainly will establish a small plant in the flower-bed area. But by and large, 6 inches in depth seems to be sufficient to give us a good protection barrier, obstacle or whatever you want to call it. Also, it is a permanent installation that in most instances will last for 10 or more years, certainly a worthwhile installation to save much time for you, the gardener.

One other fall garden repair item is worth mentioning, and that is the correction of grade or releveling of your garden. Now is perhaps the best time of the year to repair that spot that

sank during the summer, and places where the soil has dropped down an inch or two. There are two general methods of re-establishing an otherwise lost lawn level. One is by cutting down the center of the depression and rolling the sod to both sides, adding soil in the center and rolling the sod back into place. This, I found works very well if you add more soil than you think you need, because the soil has a tendency to pack and when it packs it levels lower again than you anticipated.

The other method is by adding small quantities of sand twice a year to a given area. I don't believe that a gardener should add more than $\frac{1}{3}$ or at the outside, $\frac{1}{2}$ inch of sand at one time. Then you would allow the crowns of the grass plants to raise enough in time to accommodate this increase in height. This can be done very easily, and it works. I have tried it successfully, and it has given good appearance and has done a good job

of mending in about three or four months. Also releveling may be necessary around your sidewalks and driveway where the lawn is getting taller and higher all the time. If you will cut the sod away from the walk, remove soil underneath, and then set the sod slightly below the level of the concrete, this too will save you many hours of hand-trimming and you can simply roll your mower over the concrete on one side and do a clean job of cutting each time you mow your lawn. Simple isn't it, and yet so many people leave this undone.

Yes, fall lawn repair is a good garden activity. Take it in your stride. There is no need to hurry this along. The season is long and will last out your program I am sure, and next year you will have the most beautiful lawn in many years.



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IS IT SAFE TO DO FALL PLANTING AND TRANSPLANTING?

BY MORAS L. SHUBERT

In July a friend asked me about moving a large pussy willow that was in an objectionable place. I asked, "Why move it now when its chance for survival would be much less than if you would wait until it is ready for the winter?" An experienced gardener knows, of course, that you can move many things "out of season" if you have the right know-how (the green thumb!). But he will also agree that when it is unnecessary to take chances, trees and shrubs should be moved while in a non-growing condition. So, this is written mainly for the great number of our readers who belong to the comparatively inexperienced group of gardeners (about three out of every five in rapidly-growing urban areas).

Let us first go over some of the fundamental principles that govern plant growth through the seasons, to see what changes occur within the plant that make it more tolerant of the injuries sustained during moving from one place (such as the nursery or another place in the garden) to a new spot. For you cannot move a plant, unless it is container-grown, without considerable injury to its absorbing

roots. Even a balled and burlapped specimen receives some injury to its roots.

Now, the first principle to continually bear in mind is that a plant operates upon a sound set of economics, or else it goes "bankrupt" and that means certain death. During the growing season the plant must store all of the food that it will need for the rest of the year, plus a bit left over for its start of new growth the next year. This means that a plant must make enough food by photosynthesis—sugar, starch, and all of the other food substances—to supply its needs for growth during the summer and yet have enough left to put in its "savings account" for later use. Perhaps its savings account is more like a piggy bank, because there doesn't seem to be any provision for payment of interest. At any rate, it is important to remember that it takes a proper supply of healthy leaves to insure that plenty of food is stored.

A second principle to keep in mind is that plants use water very extravagantly, wasting most of it by loss into the air, when their leaves are

green, but they waste little during their non-growing periods, especially if they drop their leaves. This also affects our decision as to how and when to move trees and shrubs, for, as mentioned earlier, roots are damaged and injured roots cannot absorb water fast enough to keep up excessive water loss.

So, if we move a plant when it is in its winter "sleep" after a good season of growth, it will be well provided with food and will not be squandering its water.

Up to now, I have avoided using the word "dormant", because there is something about this that needs explanation. When most plants cease growing at the end of the growing period, they go into a resting period that is brought about by changes in their own physiology — a condition similar to sleep. This physiological dormancy, called "rest period", continues until further changes occur within the plant and then it can start growing again if it is in the right environment. We even see this in our house plants which are in a rather uniform environment all the time. They will sometimes go into a rest period and may remain that way for several weeks before they are ready to grow again.

Most of the woody plants that grow in our Colorado climate stay in their autumn rest period until they have been exposed to several weeks of cold temperatures. This means that if we have a cold autumn, they are ready to start growing again around the first of the year. But the outside environment does not encourage growth, so they remain dormant until good growing conditions prevail in the spring. Actually, one of our great problems in this state is that, because of the protection of mountains in many localities, we have a false "spring" too early then later, cold weather. The early warm weather starts buds and cambium into activity then when they are

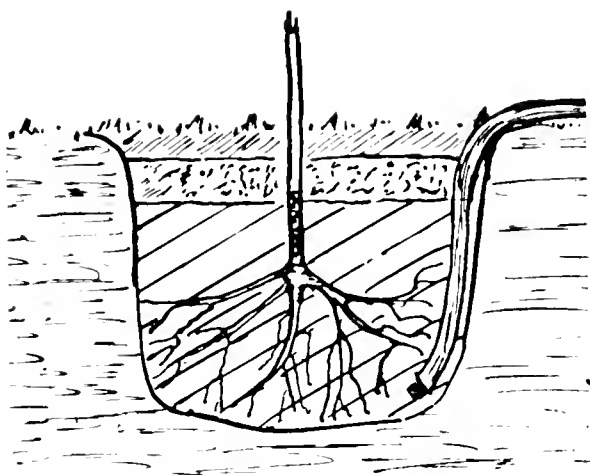
out of their protection of dormancy the next freeze kills the softened tissues. Along this same line, the alternate thawing and freezing of the bark on the south side of smooth-bark trees will kill the cambium. We call this condition "sun scald".

Another problem of survival in our drier states is the moisture loss from even dormant trees and shrubs. Few people realize how much moisture is used and lost by leafless woody plants during fall and winter.

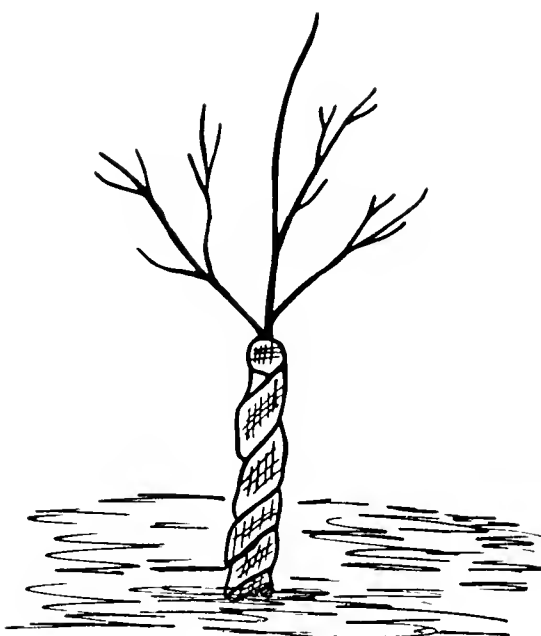
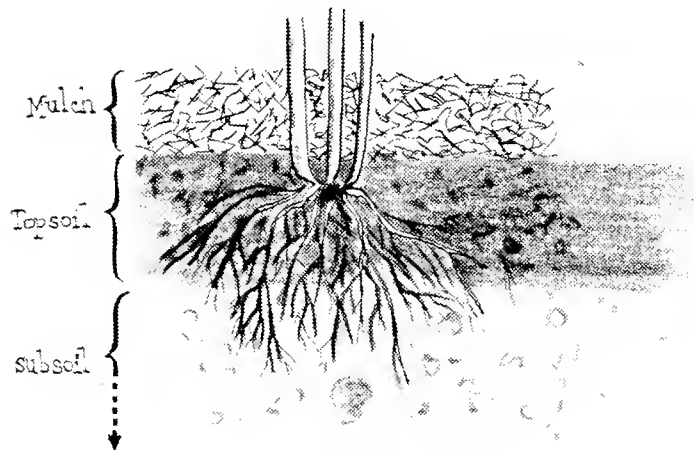
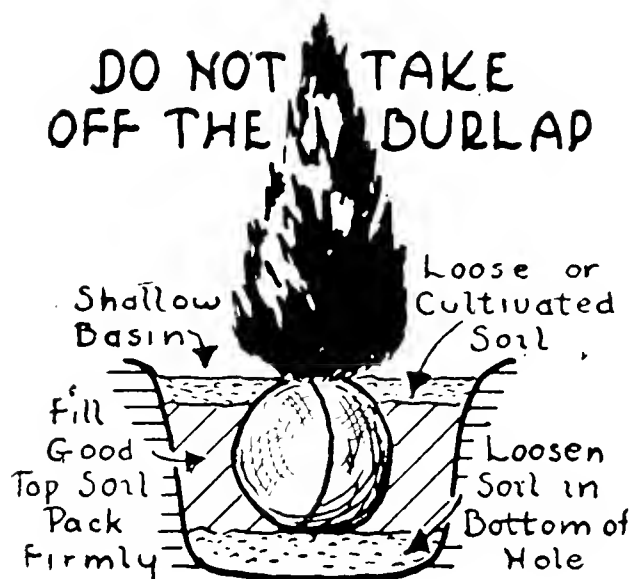
What do these remarks have to do with our beginning question? Is it safe or is it dangerous to move woody trees and shrubs in the autumn? I hope that I am not going to hurt anyone's feelings when I say, "Go ahead and plant in the fall." Up until a few years ago I was as vehement as anybody in warning against fall transplanting. So why the change? Well, first from observation then from personal experience I have learned that there is no danger in fall planting if a gardener knows what the problems are and takes proper measures to overcome them.

But why should I recommend planting in the fall? The answer to that one is that most of us are very much part-time gardeners and have so many other things to do we find we cannot get all of the planting and moving done in the early spring. In the fall when there is a slack period but still many nice days to get out and work, we can safely do the moving that might be done with too little preparation during the usual "planting time". I have tried ever since last March to move some French hybrid lilacs, but could not find the time (and weather). So, I have resolved that as soon as they go into their rest period I will move them. And I think they will bloom next year, too!

So, now let us summarize by putting down the steps to successful fall moving of deciduous trees and shrubs.



DO NOT TAKE
OFF THE BURLAP



1. Plant carefully by placing the roots in a hole that is larger than the root system. If the specimen is bare-rooted, sift a mixture of well-rotted compost or peat and soil around the roots and gently firm it. Finally when the hole is filled with soil, let water run into it until it is completely flooded. Do not stir or tamp the soil now, but let the water sink to the soil then add more loose soil at the surface to make up for the settling.
2. Mulch the surface with straw or coarse leaves to a depth of at least five inches. This will prevent rapid changes in temperature and hold the moisture all winter long.
3. Shade the tree or shrub (this is helpful but not always necessary). If stakes, or screen wire are put in place about three inches from the trunk of a small tree on the south side or around a bush (mainly as a wind break for bushes) there will be an improvement in the next year's growth.
4. If many of the roots have been damaged (you have to judge each case individually) prune the tops proportionally. But, it is not necessary to prune as much as we often do when spring planting. During the longer period in place, and with a good mulch, the roots will heal and grow more before spring growth starts.

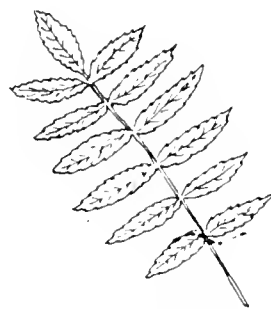
I practiced all of this in November, 1958, and last summer picked as many currants as I had the summer before off the same bushes. While this may not work equally well for everything, I can recommend it for a wide number of species. So if you have the urge to plant this fall, go to it.



ASPEN



MAPLE



SUMAC



COTTONWOOD



ROSE



COTTONWOOD



OAK

AUTUMN

GOES OUT

IN COLOR

By KATHARINE B. CRISP

To view the brilliant gold of masses of aspens or watch the trembling of their leaves in the sunlight is an experience once seen will always be remembered. The aspen, *Populus tremuloides*, was called the quiver tree by the Indians. In late September and in October a trip into our mountains is almost as urgent as getting outdoors on the first spring days.

As the season advances the gay color of the aspen descends from the mountain summits to the lower valleys. The change in color is gradual but a severe snow or frost may produce a sudden change. During the Indian summer days the mountains are magnificent with the golden splendor of dense groves of aspens against the dark green of ponderosa pine and Douglas fir.

In the canyons at lower altitudes the narrow-leaf cottonwood, *Populus angustifolia*, often mistaken for aspens by the passing motorist shimmers in the autumn sunlight. On the plains the broadleaf cottonwood, *Populus sargentii*, turns a pale yellow, intensified somewhat by the blue sky. The box-elder, *Acer negundo*, turns a brighter yellow.

Among our native trees and shrubs yellow is the predominant color in the fall foliage. The clear bright yellow of the mountain maple, *Acer glabrum*, and of the thimble berry, *Rubus deliciosus*, found along the streams and in the canyons is always pleasing.

A few shrubs turn red. The most conspicuous is the sumac, *Rhus glabra*, abundant in the lower foot hill gulches and mesas. After the leaves fall the brilliant red heads of the sumac add a splash of color to the landscape. If picked at the right time these seed heads are most vivid and last well without fading throughout most of the winter.

Extending into the foothills west of Sedalia and southward the scrub oak, *Quercus gambelli*, a shrub or small tree offers shades of red, bronze, and brown. The wax flower, *Jamesia americana*, is an attractive shrub in the canyons of the foothills turning red and orange. The wild rose bushes have reddish leaves among which the bright red fruits or "hips" shine.

Another spot of color may be a low training shrub, the poison ivy, *Rhus radicans*, a member of the sumac family. The poison ivy (leaflets 3) is of-

ten mistaken for the Virginia creeper or woodbine (leaflets 5), a member of the grape family. The waxy yellowish white berries are born in loose panicles, while the berries of the woodbine are blue-black on red stems in clusters. The leaves of both plants turn to shades of red and orange red. The poison ivy is very poisonous to some persons, but others seem to be immune. The poison is given off in a volatile oil from the leaves and young stems.

The autumn foliage in our cities is man planted. The bulk of color comes from the soft maple, *Acer saccharinum*. The light brown of the American elm and the pale yellow of the cottonwood are important in the color picture in City Park, Washington Park, and throughout the city. In Washington Park the buckeyes turn color early to bright orange while the other trees are still green. Among other trees whose leaves turn yellow are white ash, *Fraxinus*; honey locust, *Gleditsia*; black walnut, *Juglans*; willow, *Salix*; tree of heaven, *Ailanthus*, and bur oak, *Quercus macrocarpa*.

The leaves of the hard or sugar maple, *Acer saccharum*, turn red and gold. The oaks pick up the color scheme in brilliant scarlet of the scarlet oak through the dark red of the pin oaks. The scarlet oaks on the Civic Center turn a deep reddish mahogany. The white oaks turn yellowish to brown and retain the leaves all winter. This is also true of the bur oaks.

A beautiful red oak stands at the entrance of Botanic House, also a fine tree at the north end of Cheesman Park, another on a small triangle on 17th and Downing. Recently a red oak has been planted on the Sixteenth Street side of the Hilton Hotel. We hope it will thrive and each succeeding autumn become the talk of the town.

In our gardens there are shrubs which turn yellow, but not the clear gold of the ash. A few turn russet and purplish red. Members of the *Viburnum* family are in this group. The lilac has a slightly purplish tone, the forsythia is russet and purple and the Japanese barberry is red or bronzy red in leaf color.

Our native dogwood, *Cornus stolonifera*, has white fruits and bright red stems and the leaf turns red. Patches may be seen in Cheesman Park. Near the memorial building is the bright red burning bush, *Euonymus*, with interesting orange fruits.

Many of the flowering crabapples are ablaze in the fall landscape with their brilliant red or yellow fruits. The hawthorns are perhaps more conspicuous in their fruiting season than at any time of the year. The Washington thorn, *Crataegus phaenopyrum*, has brilliant red fruit. The Amur maple, *Acer ginnale*, offers gold to scarlet foliage.

A good opportunity to observe autumn color in several types of trees presents itself in Fairmount cemetery. Years ago several desirable types of trees were planted there and have developed into beautiful specimens. A fine sugar maple with red and gold leaves is conspicuous in the fall. Large Norway maples turn yellow. The sycamores have leathery brown leaves. Mountain ash trees with yellow foliage and bright berries are scattered here and there. Bur oaks and white oaks are sizable trees whose yellow form a striking contrast against the evergreens. Some smaller red oaks also may be seen.

Foliage colors are more beautiful in the sunlight which gives them an intensity which is absent in the shade and on dull days. We have a fine opportunity to enjoy these beautiful colors on our many sunny autumn days.

Dear Reader:

This is your invitation to attend the Colorado State University Horticulture Club presentation of the 1960 Horticulture Show, "The Leaf In Your Life." The Hort Show, the only exhibition of its kind in Colorado, will occupy the Large Ballroom of the Student Union Building on the CSU Campus in Fort Collins, Saturday, November 5, 1960.

At 10 a.m. Saturday morning, the Club members will open the doors of the largest Hort Show in the history of the Club. Since the Show's beginning many years ago in a classroom (about 2,000 square feet) it has continued to grow and expand. This year's Show will cover nearly 12,000 square feet and will include more than a dozen educational and informative displays and demonstrations as well as a day long program of horticultural movies, garden and flower arranging clinics and half a dozen or more large, decorative displays.

Spectators will see the large area depicting a beautifully landscaped patio and lawn which will include real turf, 15-20 foot evergreens, shrubs, flower beds, pools, and landscape lighting. A "Garden of Grottos," accented with tropical flowers and plants, will be backed by several realistic grottos and the sound of falling water. The 1960 Horticulture Queen's throne will be surrounded by a beautiful Colorado Carnation Fantasy of pastel tinted carnations with aspen trees, yucca plants and babysbreath in matching colors.

Because of the important role that the CSU Horticulture Department is playing in the ever growing and developing horticultural industry, the major aim of the Hort Show is to inform and help further educate the general public in horticulture. To do this in the 1960 Show, a series of displays and demonstrations by graduate Horticulture students will show the effects of filtered light, temperature, nutrients and carbon dioxide on carnation plants. Students studying and doing research with artificial growing media will demonstrate and explain "tip culture." Undergraduate students will present displays and demonstrations in Plant Propagation, Fruits and Vegetables, Floriculture and Floral Design, Landscape Design, and Turf Management. The Colorado Gladiolus Society will also feature a display of educational and informative importance.

The Hort Show is the most important undertaking of the Horticulture Club at CSU. An auction of all the materials used in the Show (floral arrangements, plants, fruits, vegetables, etc.) is to be held Saturday evening from 8 to 11 p.m. The income from this auction finances Club activities, including the CSU Flower Judging Team's participation in annual national competition.

Relatively few people put the Show together each year. But it would be impossible without the assistance of many professional horticulturists throughout the state of Colorado and, in many instances, across the United States. The Colorado Flower Growers Association and its members play one of the most important roles by contributing the many flowers, plants and equipment that make the Show possible. Colorado canning companies, Denver wholesalers and other 'pros' of the industry all do more than their part to help put the show on the road.

May we again invite you to come to the CSU Campus in Fort Collins on November 5, 1960 (Show time, 10 a.m. to 7 p.m.; Auction, 8 p.m.) to see the enjoyable and educational 1960 Hort Show.

Very cordially,
THE CSU HORTICULTURE CLUB
Phil Easter, Manager
1960 Hort Show

SAVE THOSE TENDER PLANTS

By DR. HELEN MARSH ZEINER

Some tender or non-hardy plants have long been garden favorites. Today the number in common use is increasing with the popularity of patios, accented with potted plants, hanging baskets, and outdoor planters. Since many of these plants are too tender to overwinter outdoors in this climate, they must be brought in or left to die. They may represent a considerable investment, and the gardener on a budget will certainly wish to hold them over for use another year. It is not difficult to keep most of the common non-hardy plants, although they do not all need the same care. Following is a list of some of the more commonly used non-hardy plants, with directions for their winter care:

Begonia semperflorens, the wax begonia. These are the small, free-flowering begonias often used as house plants. They are now frequently used as edging or bedding plants as well as patio plants. If these begonias are potted, simply bring them in and treat them as house plants. If they are in a planter or a border, it is best to take cuttings which can be rooted readily in moist sand, vermiculite, or perlite. The cuttings may also be rooted in water, if this is more convenient. As soon as the cuttings are well-rooted, they should be potted in a good potting soil and maintained as house plants until spring, when they can be set out as soon as danger of frost is past. Remember that begonias need some sun and place them accordingly during their winter stay indoors.

Begonias, tuberous. Long a favorite in the shady border, the tuberous begonia will do well in planters or porch boxes on the north side (or any shaded side) of the house or patio. There are some very beautiful hanging types for use in baskets. When the first frost

has killed the foliage and flowers, take up the tubers and shake off the excess soil. Spread the tubers out to dry, then carefully clean off any remaining soil and dried roots. Put them in dry sand or dry peat moss and store them in a cool place where the temperature is above freezing. A basement fruit cellar is usually good. The tubers may also be kept in plastic sacks with ventilating holes, such as those in which vegetables are sold. About the last of February or the first of March, the tubers should be planted in pots or shallow boxes. They may need to be transplanted to a larger container as they develop. By the time all frost danger is past, you should have well-developed plants to set out.

Canna. This is an old time favorite, particularly for bedding. Some of the newer cannas are dwarf, and much more usable than the old-fashioned very tall-growing cannas. As soon as the foliage begins to dry up, the rhizomes may be dug and left with any adhering dirt until they are well ripened. They should then be stored in peat moss or sand in a frost-free place, such as a basement. If they are stored dry, watch for any signs of shriveling and then moisten slightly. Some growers recommend moist cool storage, which is satisfactory as long as the tubers are kept moist, never wet. If they are stored in moist sand, watch for any appearance of mold. If mold does occur, let the rhizomes dry out. It is generally advisable to divide large clumps before storage.

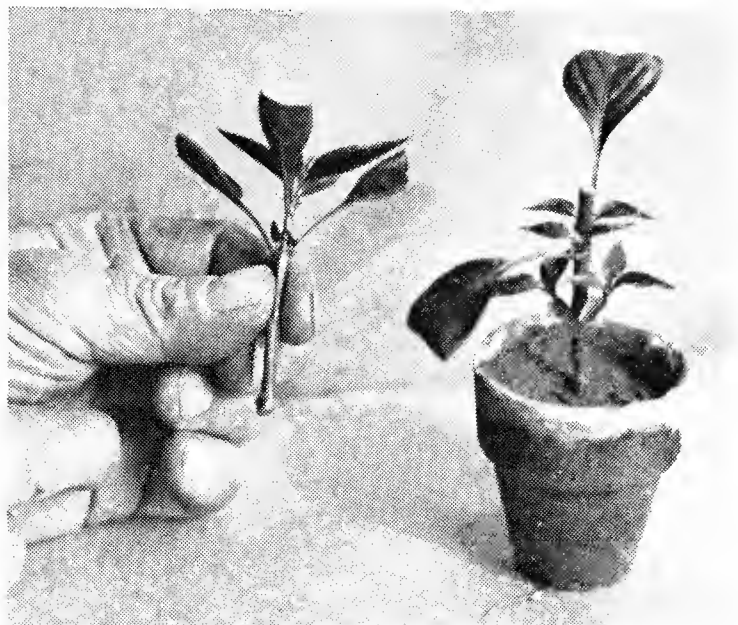
Coleus. This is the common foliage plant used in so many ways. Since it roots readily and grows rapidly, it is best to take cuttings and start new plants. It can be handled in the same way as the wax begonia. Since coleus tends to be a rapid grower, it is wise

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STARTING PLANTS FROM CUTTINGS



Parent plant before slip is taken.



Cutting is now ready for insertion in rooting medium.



Cutting is placed in cold frame or flat for rooting.



Lower leaves are removed from slip.



Using glass filled with water and covered with foil for starting a few cuttings in the home.

to pinch out the tips of young plants to insure bushy plants.

Dahlia. After the first frost, dig the tubers, dry them carefully, and store them in peat moss or sand in a cool place where the temperature will remain above freezing. In this dry climate, some growers prefer to keep the sand slightly moist.

Another method of storage has been developed by Dr. P. P. Pirone, Plant Pathologist at the New York Botanical Garden. He conducted tests with the aim of answering the problem of dahlias drying out in storage. By first dipping the tubers in a Wilt-Pruf mixture (4 parts water — 1 part Wilt-Pruf) allowing them to dry and then storing them in dry peat moss he obtained 100% protection against tuber desiccation.

Geranium. If the geraniums are in pots, they may be brought in just as they are and kept in a sunny, but cool, location. This will give you large plants for another year. If you prefer the smaller plants, or if the geraniums are planted directly in soil, it is best to take cuttings. Cuttings taken in the fall should give you nice young plants to set out in the spring. You may try pulling the plant and hanging it in a cool place, or packing them in boxes with soil around the roots and storing them in a cool basement. However, our climate is so dry that these methods are not always successful. Taking cuttings remains the best method for overwintering geraniums.

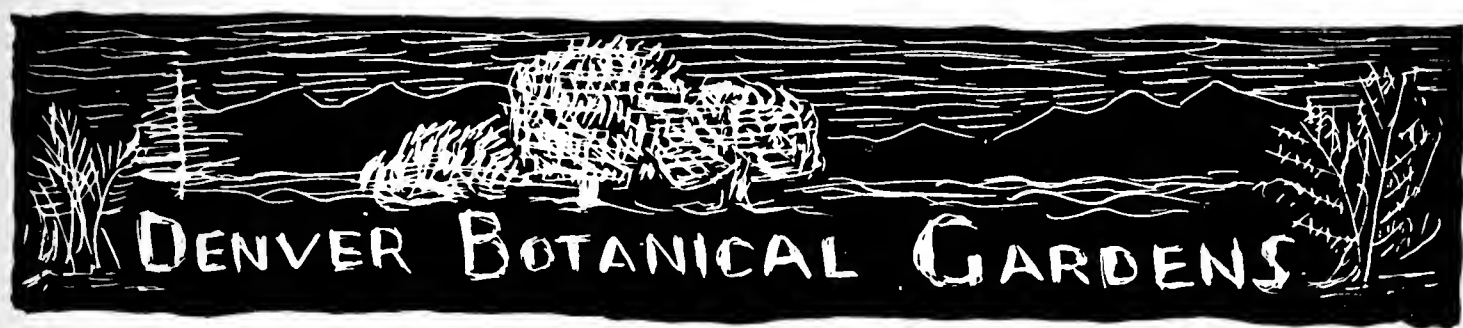
Gladiolus. As soon as the foliage starts to turn brown, or when the first frost strikes, dig the corms, cut off the tops, and dry the corms in the open air for several days or longer. Sort out and discard any diseased corms. Store healthy corms in cigar boxes or ventilated plastic sacks in a cool, frost-proof storage place. A temperature of 40° is recommended. It is advisable to dust the corms with 3-5% DDT before

storage. If there has been any evidence of corm rot or scab, the corms should be treated with full-strength Arasan dust for corm rot, or soaked in mercuric chloride solution (1 ounce per 7½ gallons of water) for two hours for scab. This is poisonous—be careful.

Gloxinia. We are familiar with the gloxinia as a house plant, but it can be used very effectively outside as well. As time for frost approaches, withhold water to ripen off the leaves. Store the pots at about 45°, giving them just enough water to keep the tubers from shriveling. When they begin to show signs of growth (February or March), shake off the old soil, and repot in a good potting soil. If the plants were not in pots, dig the tubers, shake off the soil, dry in the air, and store in ventilated sacks until February or March when they should be potted.

Oxalis. This versatile little plant is often used indoors, but it is a very effective border plant and will do well in partial sun. Sometimes this plant will live through the winter outdoors, but unless it is a mild winter, it may winterkill. Therefore, it is best to take it indoors. The plants may be dug, the tops trimmed back, and the plant potted and cared for as a house plant. After a period of rest, they may bloom during the winter. The bulbs may also be cleaned off, permitted to dry, and stored in ventilated plastic sacks or in dry sand in a cool cellar.

Peruvian Daffodil. This is a beautiful lily-like plant belonging to the Amaryllis family. As soon as frost threatens, it should be dug with great care in order to save the heavy roots which grow out from the base of the bulb. If these are removed, the bulb is usually damaged, and may not flower another year. Shake off loose dirt carefully, dry bulbs a few days, and then store in ventilated plastic sacks in a cool basement. A fruit cellar is ideal.



ABOUT CHRYSANTHEMUMS

BY DR. A. C. HILDRETH

Last winter there was much winter-killing of chrysanthemums in Colorado. Often early fall freezes cut down our late varieties before the buds open. These garden tragedies remind us that our high-altitude climate is not ideal for chrysanthemum growing. They also warn us that we must be careful about what varieties we plant and how we care for them. Periods in which we enjoy a series of mild winters and unusually long growing seasons lull us into forgetting these facts of chrysanthemum life.

What can be done about these problems of fall frost and winter injury? Commercial flower growers speed up late-blooming chrysanthemums by shortening their day length. This is done by covering the plants to exclude light for a few hours each day during the critical period. In the average garden such a procedure is not practical.

Many gardeners have lengthened the growing season of a few late-blooming plants by covering them on frosty nights. Some commercial growers have elaborated on this method by planting late varieties under a framework over which some covering is placed in autumn to protect the plants from frost. In this way the flowering season often can be prolonged several weeks. This method, of course, is not suitable for chrysanthemum plantings grown for landscape effect.

The only practical way in which our gardeners can cope with the problem of early frost is to plant chrysanthemums

that will flower satisfactorily in our short growing seasons. This will eliminate from consideration some of the choicest varieties temptingly pictured in nursery catalogs. However, there are many good chrysanthemums that are sufficiently early for our climate.

The winter hardiness problem can be solved in many ways. Perhaps the simplest method is to treat all chrysanthemums as annuals, abandoning them in the fall and planting new ones in the spring. In this way we can enjoy whatever variety we wish, so long as it is early-blooming. Of course buying new plants every spring is expensive.

Another way is to protect the plants over winter, as is done with many tender perennials in northern climates. The clumps are dug before severe freezing occurs and carried over winter in a cool greenhouse. Or the clumps may be set in a cold frame. During the severest part of the winter the cold frame sash is covered with a mat or a layer of straw.

Gardeners generally recognize that old clumps of chrysanthemums are more subject to winter-killing than one- or two-year-old plants. Dividing chrysanthemums every year or two is therefore a means of keeping them hardy.

Mulches heavy enough to protect the plants from severe cold are not always satisfactory in our climate, and may do more harm than good.

The most satisfactory solution is to

plant only varieties that are known to be hardy in our area. Among chrysanthemum varieties there are all degrees of hardiness. Under our conditions we need more winter hardiness in chrysanthemums than in almost any other part of the United States. Weather records show that on occasion, Colorado winter temperatures can be discouragingly low. A variety that is hardy in Philadelphia might be tender in Denver. Also (except in the mountains) we may not have sufficient snow-cover to protect the plants from severe cold. A chrysanthemum plant under a heavy blanket of snow in Vermont may survive when the official temperature is 30 degrees below zero. The same variety may freeze to death at 15° below zero on the bare plains of Colorado. Whenever anyone says that a chrysanthemum variety is hardy he should say where!

Early-blooming chrysanthemum varieties adapted to cold climates are of recent origin. Thirty years ago only one Colorado nursery catalog included chrysanthemums. These were not listed by name but simply as "hardy bronze", "hardy white" and "hardy yellow." On growing them I found that they were named varieties but the nurseryman had apparently lost the labels. As I recall it they were respectively Alice Barham, Tasivia and Lorelei. All were early enough for our climate but inferior in hardiness and flower quality to many modern varieties.

Some milestones along the long road that led to early, hardy varieties for cold climates may be worth noting here. The chrysanthemum probably was first brought to America from England in the latter part of the 18th century. Up to the end of the 19th century its out-door culture was mainly in southern gardens where long growing seasons matched its late blooming habit. During that period, however, greenhouse production of this flower developed tremendously and green-

house varieties and cultural techniques reached a high degree of perfection. It was not until the 20th century that much attention was given to garden varieties.

Then, through introductions from France and the efforts of American breeders, many early-flowering varieties became available to American gardeners. Prominent in this work were Elmer D. Smith of Adrian, Michigan, Charles Totty of New Jersey and E. H. Marchel of the Dreer Company in Philadelphia.

About 1917, F. L. Mulford of the U. S. Department of Agriculture began collecting early-flowering chrysanthemums from nurseries and dooryards of the eastern states. He also imported the earliest English varieties. He saved seed from open-pollinated flowers of the earliest-blooming plants in this planting and grew numerous seedlings. Seed was again saved from the earliest-flowering of these new seedlings and more seedlings were produced. This process was repeated through many generations. From these progenies 22 varieties were selected and introduced between 1937 and 1940. All were early-blooming and of dwarf habit and most were superior in flower quality to early types of that day. Some also had considerable hardiness.

Meanwhile other breeders were making significant progress. In 1932, R. M. Kellogg Co., of Three Rivers, Michigan, introduced the cushion type of chrysanthemums under the name of "Azaleamum". These were early-blooming and fairly hardy. The flower quality was disappointing but the mass effect was attractive.

In 1928, Alex Cummings of Bristol Nurseries, Bristol, Connecticut, began crossing *Chrysanthemum coreanum* with early-flowering cultivated types. This was the first time that a chrysanthemum breeder had departed from the species *Chrysanthemums morifol-*



A group of the Cheyenne seedling in the Botanic Gardens.

ium (also called *C. hortorium*), the cultivated chrysanthemum of China and Japan. From this cross came greater hardiness and unusual flower colors with a fine sheen. The variety Mercury was introduced in 1933 and many more soon followed to establish the race known as Korean Hybrids.

During the late thirties. Dr. E. J. Kraus of the University of Chicago began hybridizing chrysanthemums, using both garden and greenhouse types as parents. From this breeding he produced varieties that were sufficiently hardy for much of the United States. Their flower quality was decidedly superior to that of previous hardy varieties. Dr. Kraus continued breeding chrysanthemums after his retirement from the University and has produced over a million seedlings from which his selections have been made.

An important improvement in hardy garden chrysanthemums was made by Glenn Viehmeyer, of the Agricultural Experiment Station, North Platte, Nebraska. He hybridized hardy, early flowering strains with the tenderer carnation-flowered type, and thus produced a new race of carnation-flowered garden varieties. His variety Pathfinder is still one of the best and most distinctive hardy chrysanthemums.

These early-flowering types, and

especially those that also had considerable hardiness, increased interest in garden chrysanthemums and greatly extended their range of cultivation. However, none was reliably hardy in the coldest parts of the Central and Northern Great Plains nor in the Prairie Provinces of Canada.

About 1932 the Cheyenne Horticultural Field Station, Cheyenne, Wyoming, began extensive testing of chrysanthemums with the objective of finding or developing varieties of exceptional hardiness for severe climates. Over the years about 2000 named varieties and breeders' selections were tested. Included were all the types previously mentioned. None was found entirely hardy in the rigorous Wyoming climate.

Seeds from open-pollinated flowers were saved from all plants that survived the milder winters and matured a seed crop. Thousands of seedlings were grown and tested. Cold winters selected the hardiest ones, short seasons selected the early-bloomers and strong winds selected the sturdy bush-type plants.

After many years of this procedure the progenies become fairly pure for earliness, hardiness and desirable bush type. Several selections were made and



A closeup of one of the lovely white seedlings in the same planting.

introduced to the trade, including Ari-kara, Dakota, Flicka, Hidatsa, Waku, Overley and Roza.

Later these parental lines were out-crossed to large flowered but less hardy garden types to improve their flower quality. From this breeding the varieties Bridger, Buffalo, Mavrick, San Saba and Togwotee were developed. These were introduced to the trade last year.

This hardy parental material was early shared with other chrysanthemum breeders and became the principal source of hardiness in the varieties developed by the University of Minnesota and the Nebraska Agricultural Experiment Station.

For the colder parts of Colorado and the Great Plains and Rocky Mountain areas farther north, these Cheyenne varieties are recommended as being the hardiest available. For areas with milder climates there is a much wider selection of varieties. In making such selections the catalogs from eastern and mid-western nurseries, advertising hardy varieties, may not be of much help because our climate is so different from theirs. Instead the local nurserymen, garden advisors and experienced gardeners should be consulted as to adapted varieties. With new varieties which have not been thoroughly tested in our area, one should proceed with caution. It takes several years to adequately test a new variety.

Chrysanthemums are well adapted to our alkaline soils and our bright sunshine. They thrive either in full sun or partial shade. They grow in a wide variety of soils. Being heavy feeders they prefer a soil rich in nutrients. Established plantings will benefit from a liberal top dressing of manure which may be applied either during

the growing season or when the plants are dormant. A complete chemical fertilizer may be substituted if necessary.

Chrysanthemums are usually planted in spring. However, this is one perennial that does not mind being moved at any time, even when in full bloom. The clumps are simply dug and reset in the new location. The modern nursery practice of growing chrysanthemums in containers makes off-season planting easier. As previously mentioned chrysanthemums generally benefit from dividing at least every two years. Cushion types can be left longer to form bigger clumps.

Insects sometimes attack chrysanthemums. Aphids may infest the tender tips, requiring treatment with a suitable insecticide. A troublesome grub sometimes attacks the roots and base of the stem eventually destroying a whole planting. These pests are best detected by lifting suspected clumps and examining their undersides carefully. This pest is controlled by treating the soil around the plant with a chlordane solution mixed according to the manufacturer's directions for soil drenching.

Chrysanthemums are seldom affected with fungus diseases in our dry climate. However, they are subject to virus diseases, the commonest one being evidenced by a yellow and green mottling of the leaves. There is no cure for virus diseases. Infected plants should be dug out and burned. In dividing, care should be taken not to include any plant suspected of having virus infection.

No garden can be considered complete without chrysanthemums to close the season of flowering. There is still time to set out container grown plants or field clumps and enjoy these colorful flowers this fall.



PLANT NOW WITH CONTAINER GROWN NURSERY STOCK

BY JOHN CRAMER

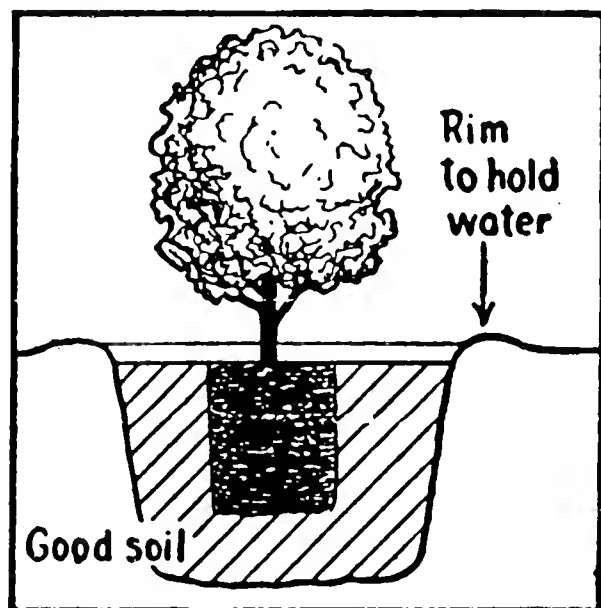
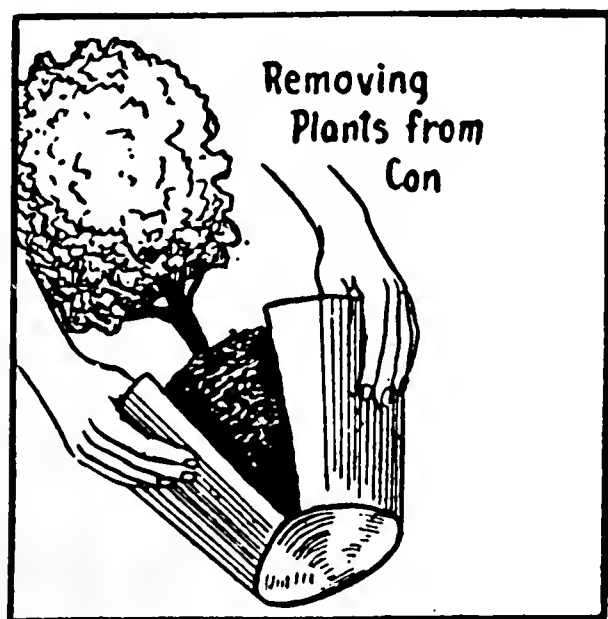
Manager Creative Gardens Nursery & Garden Shop

At the time this copy comes off the press and you receive it at your home, Fall won't be far away. Naturally, none of us likes to hear about Fall but, on the other hand, we, in this part of the country, are fortunate to have such a lovely Fall. It is one of the finest seasons of the year. The temperature is pleasant and the colors are beautiful. We are all getting up steam again to do some garden work. Mother Nature inspires us to do so. When we look around seeds are falling; what could be a better indication that this is the most suitable time to plant. We are all ready and boiling over to again get our hands in the good old dirt.

In the past months we visited many gardens, some of them were on the Look and Learn tours, so well organized by Horticulture House. We discussed our problems with various people in the Horticultural field and are full of ideas. We noticed in the months past that some of our planting arrangements were not too good; some

of the foliage, the textures, or the colors were not quite the way we wanted them. We were also concerned about the heights; some were too low, others too high, some places needed filling in. With all this information gathered up, we now can go to a Garden Center or Nursery where a pleasant surprise awaits us. Here we find a great assortment of well filled bins of many varieties of trees, shrubs, roses, and perennials which have all been grown in containers. Now we can see, right in front of us, the plants we have visualized growing in a particular spot of our yard.

We make our selection. The next step, and this is where we *used* to get into trouble, is the actual buying of the plants at this time. It is not too long ago that the nurseryman would tell you "Lady, can't you see that the trees and shrubs still have their leaves. We don't transplant any nursery stock until we have had a killing frost." This means that the temperature must have



dropped enough that it stops the sap flow in the plant and the leaves drop off. Then the plant is dormant and safe to transplant. What are we doing today? Why do I say, go to a nursery *now* and buy your plants—don't just make selections and have them tagged for delivery next spring. Pick out the specimen plant, pay the salesman, take it home and place it in the location desired. This is a lot different from the way it used to be. How can we do all this today and NOT have to wait for this plant to be dormant? As said before, most Garden Centers and Nurseries carry a large assortment of plants in containers.

The way to visualize this is that during the spring you bought Geraniums in flower pots. You carefully tapped these plants out of the flower pots and planted them in the desired location. There was no shock to the plants and they kept right on growing. You will find it the same way with container grown nursery stock. You buy a lovely plant, all leafed out, grown in the container, and ready to plant. Here again, when you have this plant at home in your garden, you can see how you like it. Just place the container in the spot you want the plant and see how it looks. If not quite satisfied, you can select another spot by picking up the container and trying the plant elsewhere. Maybe you will find that the foliage texture,

the fall color, stands out a lot more in location No. 2 than it did in location No. 1.

I am sure anyone who has missed out on this tremendous improvement of planting plants at the time when they are at their full glory has missed a lot. The people who have been using them can tell you what a great advancement this introduction of container grown nursery stock has been. Now you can actually see what you are buying. So, let's all go to the Garden Centers or Nurseries and pick out the material we need. As you can readily understand from the above, container grown nursery stock is the perfect way to buy. It is safe and you can see what you are buying.

There may be one thing left in the back of your mind which bothers you. What about winter kill? Sure, it can happen but that is the same for plants you have already established or the plants you bought early this spring. Early fall planting is naturally advised, as, by so doing, the plants have a chance to get better established. By that we mean, the roots have a chance to get into the ground and start to absorb the water and food elements. This may be a point to remember—water the newly planted plants in winter-time. So, once again, let's go and see what these Garden Centers and Nurseries have to offer.

“And if Gentlemen which have little else to doe, would be ruled by me, I would advise them to spend their spare time in their Gardens, either in digging, setting, weeding, or the like, then which there is no better way in the world to preserve health. If a man want an Appetite to his Victualls, the smell of the Earth new turned up, by digging with a Spade will produce it, and if he be inclined to a Consumption it will recover him. Gentlewomen, if the ground be not too wet, may doe themselves much good by kneeling upon a Cushion and weeding. And thus both sexes might divert themselves from Idleness, and evill Company, which oftentimes prove the ruine of many ingenious people.”

— William Coles, 1657.

COMPOSTING

BY MRS. JOHN SCOTT

Colorado Federation of Garden Clubs

September is convention time for the Federation. Many local clubs change officers along with the state, too.

At the State convention in Loveland, Sept. 7-8-9, the following officers were elected:

President—Mrs. C. C. Buckbee, 4190 Depew, Denver 12

First Vice-President—Mrs. R. C. Wilson, 3995 So. Pennsylvania, Englewood

Second Vice-President—Mrs. W. D. Ela, 1006 Main St., Grand Junction

Third Vice-President—Mr. W. M. Fleischer, 1642 Claremont Ave., Pueblo

Fourth Vice-President—Mrs. E. G. McRae, Sr., Dolores

Recording Secretary—Mrs. Esther Holtz, 833 Lincoln Pl., Boulder

Corresponding Secretary—Mrs. Donald R. Moss, 4735 Saulsbury, Wheatridge

Treasurer—Mrs. E. W. Mintken, Box 867, Idaho Springs

Before Loveland (our 30th annual), there was Houston, Tex., and a national convention which some of our members attended including: Mrs. D. W. Viles, Mrs. F. S. Mattocks, Mrs. Vivian Christensen and Mrs. Ruth (C. C.) Buckbee. Later, reporting before the Judges Council, Ruth commented upon some of the high-lights and side-lights to wit:

"A Garden Club Member must—

Look like a girl;

Think like a man;

Act like a lady;

Work like a dog."

After all this, should she become an arranger of sorts or a judge this G. C. member could say:

"I ain't what I ought to be,

I ain't what I aim to be, —

But I sure ain't what I used to be."

Our National Flower Show Schools chairman, Mrs. William H. Barton, in referring to Abstract and Parabolic Curve arrangements (From *The Vo-*

lunteer Gardener, Tenn.) quoted these lines:

"Don't be a square, get hep to the new,

It must be judged, by a judge like you."

Contrary to what some judges may have thought, National Council wants them to exhibit in competition, not just once or twice a year, but again and again. Which means that all '61 shows would be doing the Federation, themselves and the judges a favor by having one or more classes open to all judges, and limited to same.

Many of our judges (Herb Gundell, Pat Gallavan and Lee Ashley, to mention a few) and exhibitors (Sue Kelly of the Cottonwood Shop, for example) make part or all of their living from gardening and related activities — teaching, writing, lecturing, etc. But this does not disqualify them from exhibiting in an amateur show, according to National Council's standards, or any other organization's, to my knowledge.

Quoting from the *Flower Show School Directive*, Jan. '58:

"The Amateur Flower Arranger is one who does not charge and accept a *stated* fee (the italics are mine, it's all right to dicker a little, eh) above travel, equipment, and plant material expense for services as lecturer and demonstrator on the subject of Flower Arrangement." In fact, we owe these gardeners a great big "Thank-You" for helping bring our shows from the milk-bottle to the champagne stage. And I was reading where even the designers who call themselves professional, win only one third of the time. A lot of amateurs can tie that.

Before leaving this amateur versus professional, I want to mention two who are well known in their fields. The one, Mrs. Marion Black Williams, Colorado Springs, District Director for the Garden Writers of America Association, an avid reader of the *Green Thumb* and author of "How our Garden Grew" in *Popular Gardening*, July. Mrs. Williams is well grounded in gardening and tells it most interestingly in many publications.

The other celebrity is Mr. Mann of the Cliff Mann Floral School, Denver. In an illustrated talk, he showed an O'Bowl (trade name) for holding oasis that you might like. His arrangers made several pyramid designs that could be viewed from any direction, that it might be fun to imitate. He used the term "Front-face" for not free-standing. His corsages were sprayed with Clear Guard for better keeping. An orchid, he said, could be worn upside down, because it sometimes grew in that position. Several designs for the bathroom, ladies boudoir and bar were shown. Sno-Pak was one of the fillers he thought helped preserve flowers. One exceptionally striking arrangement used white roses with very dark green foliage. In his designs, for this special occasion, just one kind of flower was used, and usually just one color. Try this for a church, stage, or any large area where the arrangements must be viewed from a distance. It's dramatic.

Wherever gardeners convene, sometime during the meeting, the subject of artificial flowers is sure to come up—and not from seed, either. I'm of the personal opinion that they have their uses—hospitals, people with certain allergies, hot display windows, demonstration work, etc. Attempting to ignore or give them the this-isn't-socially-acceptable treatment, reminds-me of the days when women didn't smoke in public. But they smoked, and the speculation as to who did probably prompted others to light-up. It's the foliage that leaves the most to be desired. Strip them of their artificial leaves, and use with evergreens or houseplants or florist's greenery of long lasting reputation. Hope your money holds out.

And now to come to the new varieties I tried out in my garden this year. Three Sonjanas, the ornamental climbing strawberry, costing about \$7.00 better get going on the trellis or they'll be amongst the missing another year. The trio arrived from the Atlantic coast in the green of vigor. They never stopped trying to make fruit, which I never ceased to frustrate. But as for making runners up the wire fence, or anywhere else. No. They just set. Strawberries have long been a hobby with me, perhaps I've lost my knack.

As for Armstrong's Grandiflora, Pink Parfait and Hybrid Tea, Duet, they're all the advertisements claim them to be—and that's a lot. Pink

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Parfait reminds me of a corsage, a bride, a little girl having tea with her dolls. Its petals feel silky, but they are deceptively durable. Duet has spunk. I picked some in full bloom, placed them in a glass in the kitchen, where they remained for a week (without so much as a change of water) and they looked all right, until touched. They collapsed, then. Duet is definitely an arranger's rose. Both varieties have sturdy canes, show good substance and have bloomed all summer with a minimum of care. Buy them.

Fall, for me, is the time to transplant. I divide the perennials and move those that didn't re-act as I thought they should, as to height, width, color, etc. I also, get rid of those plants that are run-of-the-mill. I want a plant that will do something for my landscape, excel as a cutting flower, and if dried have an interesting form, texture or color that can later be converted into Brittle-Beauty-Bouquets or designs. The seasons are too short and the elements too temperamental to tamper with anything but posies that please.

If you'd like to know what to plant

to satisfy those demands (or others) have a look at *The Concise Encyclopedia of Favorite Flowers* compiled by Marjorie P. Johnson, Managing Editor, *Flower Grower* and edited by Montague Free. There may be other and better sources, but the idea is you can make your garden work for you, instead of you working for it.

September's full of fruits, fall foliage and mums. They're all easily arranged. September's a back-to-school month, too, and we're all aflutter. A timely show schedule (adapted to other home and social functions) might be "School Daze". At any rate, create your designs around the little Red School House; an-apple-for-the-teacher; yellow school buses; school bells; lunch pails; books — the three R's; slates, now called chalk boards; pencil boxes; signs saying "School Crossings", "First Grade", "Principal" etc.; or wall cards — illustrated penmanship, the alphabet, etc.; you'll come up with more and better ideas. Hope you get an A, or is it an E for Effort? See you in November if the Goblins don't get me.

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ORGANIC GARDENING AND COMPOSTING

Several months ago we received a letter asking, "What is organic gardening?" We referred it to Mrs. John Newman who has practiced organic gardening for many years. Below is her reply.

Dear Friend:

I shall try to answer the question in your last letter, "What is meant by Organic Gardening?"

Organic Gardening is nature's way of gardening. The vegetation wilts and falls, the wind blows soil on to it, then the birds and animals deposit their droppings upon it, the rain and snow moisten it. After a while there is formed a thin layer of very black rich soil.

We, of course, can't do it that slowly so we make compost piles. There are several ways of doing that. One a very quick way. It is ready in about ten or twelve days. The large piles that are built up slowly and covered with soil are ready in about seven to nine weeks. The undecayed material is screened out and used as a starter for a new pile.

Another way is to use organic fertilizers. I use mostly Atlas Fish Emulsion. It is not expensive, as you use only one tablespoon to a gallon of water. When we had the large garden we put a bottle of emulsion on the hose and sprinkled it out, finishing with clear water to wash the fertilizer off the leaves onto the ground. The fertilizer was then cultivated in when the ground was workable. I also use some Milorganite. I am sure there are other organic fertilizers, but these are the two I use.

When the compost is ready, I always work a shovel full into the ground where I am going to plant. If you are planting in rows, pile the compost about six inches deep then till it in. Remark the row and plant.

In transplanting I always water the plants in with a solution of the Fish Emulsion. I very seldom lose a plant. Have moved my roses in July and every one came along fine. I don't

advise you to move yours at that time, but when you plan to sell the ground and must move what you want to save, try my method.

If your soil is built up by organic fertilization, your plants will be very healthy. Healthy plants resist pests and diseases so that sprays are not necessary. The soil will be very friable. It will be extremely easy to work in. The weeds will come out easily and the cultivating will be no trick at all.

I hope I have answered your question. If not, call again and I shall try to do better.

Sincerely,
J. W. N.

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The following method of making compost is a partial reprint of an article entitled "Compost in Six Weeks" from the October-November 1958 Green Thumb. It was written by Melanie Brown from information provided by Mrs. Jan Schoo.

HOW TO MAKE COMPOST

There are many methods of composting. Mrs. Schoo uses the formula perfected by the late Sir Albert Howard. She has speeded up this classical or "Indore" method from three months to about six weeks by shredding or cutting up vegetable and animal residues and turning the piles more often. The same proportions are used — two thirds vegetable and one third animal residues with a layer of earth on top. The addition of Fertosan helps stimulate bacterial growth in the breakdown.

Almost any vegetable matter can be used — leaves, weeds, stalks, chaff, grass clippings, kitchen wastes, coffee and tea grounds, spoiled hay, corn flower stalks, oyster and egg shells, sawdust, pine needles, hedge trimmings, pomace, sea weed, cottonseed meal, cocoa bean shell, brewery hops, etc. For animal matter, horse, cow, swine, sheep, or chicken manures are excellent because they contain 20% bacteria from the digestive tracts where they broke down food for the animals. If these aren't available, scraps of meat and fish from the table may be used, or dried blood, bonemeal, hornmeal, or tankage can be purchased. Your local seed store or hardware store can order these for you.

SUBSTANCES NOT TO USE

1. Any chemically sprayed material because it may retard bacterial action.

2. Charcoal, it withstands decay for too long a time.

3. Dish water, greasy matter interferes with air supply.

4. Coal ashes have same effect as charcoal.

5. Walnut leaves have toxic substances as do the roots and husks.

6. Sawdust, when it is over 5% of the amount of materials in the heap.

7. Waste paper because of chemical treatment in bleaching which retards decomposition.

LOCATION OF A COMPOST HEAP

The best location is a flat area, well-drained and close to a supply of water. It should be enclosed by fence, hedge, or walk, or if it is small enough, in a box. The size of a compost pile is adaptable to the amount of space available. The top of it should be saucer shaped to hold rain water or tap water. A pile should be kept as damp as a squeezed out sponge. Mrs. Schoo uses six wooden boxes. The first one is used to accumulate garden or vegetable wastes. The second starts the process with a mixture of two thirds vegetable and one third animal refuse. When the second box is full it is dumped in the third and so on until by the sixth box it is finished. Boxes one and six should be larger than the other four.

During the initial breakdown, properly made compost reaches a temperature of 160 degrees which will kill all weed seeds. During this stage, it should be turned frequently and kept damp. Otherwise air loving bacteria will not live and the heap will putrify. As this fermentation takes place the pile will shrink to about one third its original size. Turning the material in succeeding boxes is less important because a new type of bacteria takes over that is not as dependent on air. While there is still undecomposed matter, though, turning is advised.

TIME TO START COMPOST

Fall or spring is the best time for making compost. Mature compost can be put on as a mulch in fall or as a fertilizer and soil conditioner in spring. In fall, half finished compost may be applied because by spring decomposition will be complete. The addition of bonemeal and cottonseed meal increases its worth as a fertilizer.

HOW TO APPLY COMPOST

It is best to apply compost only to the top four inches of soil after it has been spaded up. This has a double purpose — it provides plant food and serves as an effective mulch against extremes of temperature, hard rains, etc. Apply compost liberally, 1 - 3 inches thick every year. Finished compost cannot burn. If you wish a higher analysis, add a commercial fertilizer. Organic gardeners never add any-

thing of chemical nature but prefer raising the nitrogen-phosphorous-potash content by adding 1 part cottonseed meal, 1 part fish meal, 2 parts bonemeal, and 2 parts woodash or greensand. These will equal Morgro or some other similar commercial fertilizer in nitrogen-phosphorous-potash content. Compost is best when applied soon after it is completed. However, it will not hurt it to stand awhile. If this is necessary, turn the pile from time to time and cover it with burlap or with a heavy mulch of straw or spagnum moss until you are ready to use it. For greater bulk, add peat moss.

If there are any further questions, Mrs. Jan H. Schoo, 2650 Dexter, Tele. DE 3-1249 will be glad to answer them or to show her compost boxes.

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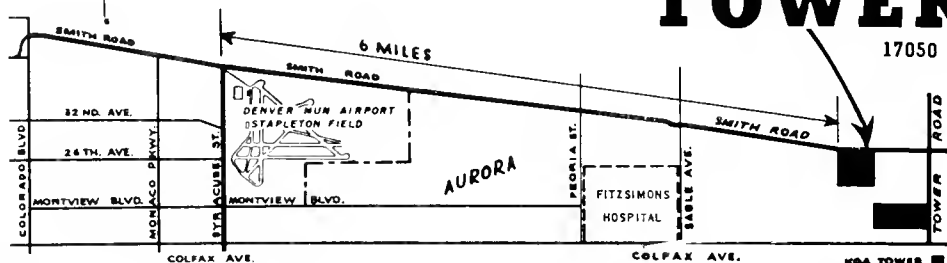
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This character willow tree at Applewood Mesa was saved by shifting the alignment of the street.

Out Where The Plains Meet The Mountains

By PAULINE STEELE

THERE is a unique subdivision of new homes. Unique in that it contains many large and beautiful trees. These trees were part of the land before the home building began, yet the building activities have not disturbed a single bough. The success of this community is proof that progress and beauty can be strong partners. This combination takes vision and a man who truly appreciates the worth of a tree, not in dollars and cents—he knows that, too—but the tree's worth in shade, its long years of growth, and its aesthetic value to his subdivision. He has written covenants to protect them. Drive out to Applewood Mesa, take a lunch, hike over the trails and see for yourself.

Our subdivider with vision is Mr. Myron Bunger. He grew up in this area. His people were Wheatridge truck farmers. They loved their land. His kinship to trees is strong and reminiscent of Mayor Speer who was responsible for Denver's tree lined streets. To insure continued planting in his community he has purchased and distributed over 400 seedless cottonwood trees and is maintaining a trial nursery at his home. This nursery contains many unusual and hard to grow trees and shrubs.

Let Mr. Bunger introduce you to the "natives." On the slopes of the mesa he showed us Mountain Mahogany, Paint Brush, Prickly Pear, Chokecherry, Wild Plum, Native Clematis, and Western Virgin's Bower. Yuccas were in all their spring glory when we visited there. A trip along the trails revealed many Colorado wild flowers and native grasses. The steep slopes of Table Mountain were bright with Indian Paint Brush.

Buyers are encouraged, yea, required to keep the natural contour of their site. Mr. Bunger will point out the lichen covered rocks and suggest how they may be preserved and used to the greatest advantage. Sites are spacious, and irregular in size—providing the most in quiet Western living. It is delightfully different.

How do the present residents like their area? Do they cooperate in the preservation of the trees, the growth, and contour? They do, and they have added to the native plantings.

Drive through the many miles of winding streets, first through the gentle slopes at the foot of the mesa, then on the steeper slopes of Table Mountain. See for yourself this subdivision that is truly different.

INDOOR GARDENING SCHOOL

Dr. Helen Zeiner will begin a new class on house plants October 17. It will run through November 14. Classes will be held at Botanic Gardens House from 2-3:30 p.m. on Mondays only. Registration is \$5.00 per person and must be in to the Botanical Gardens Office by October 10.

Home Landscaping Course. Thursday evenings, September 22 through November 17, 7 to 8:40 p.m., at the Colorado Medical Center, Building A-2, 19th and Birch, Denver. Registration fee is \$10.00. M. Walter Pesman, Instructor.



Question: When can I divide my tulips?

Answer: Tulips may be divided from the present time until the ground freezes. They may be reset immediately. A depth of 10 to 12 inches is recommended for this area.

Question: What is meant by "hardening off" plants?

Answer: By "hardening off" plants, we mean gradually decreasing the amount of water given them, thus discouraging succulent growth which readily winter kills. At this time of year, lawns should be watered less frequently than in summer. Cutting waterings down to once a week or once every ten days promotes good root growth and puts the tops in "winter condition". Shrubs and trees should also be watered less frequently, resulting in a harder woody growth which will not be readily winter-killed.

Question: My tomato plants are loaded with green tomatoes which I know will not all ripen before frost. Can I ripen these in the house in any way?

Answer: When frost threatens, carefully pick the green tomatoes and wrap each individually in a piece of newspaper. Store in a box in a cool place such as a fruit cupboard in a basement. About once a week unwrap and check for ripe tomatoes. You will find that there will be a gradual ripening, so that you may have tomatoes for weeks.



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SEASONAL SUGGESTIONS

As autumn delicately and gracefully envelopes our majestic Rockies, cooler nights and shorter days cause us to glance toward the mountains. We can see the color nibbling at the quakies in the high country. Just a smattering here and there at first, but by late September the pace begins to quicken. Entire forests burst forth in a new cloak of yellow as the greens of summer disintegrate before the forces of nature. Slowly and steadily this yellow mantle advances down the mountain-side, splashed here and there with the reds of the shrub maple and sumac. Truly, autumn is a spectacular time in the Rockies, but we have to get out to see and enjoy it. Set aside a weekend for one of the trips suggested by the map on the front cover.



GARDEN PLAT



STORE BULBS

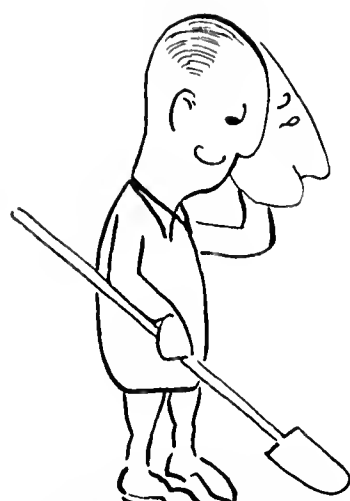
The changes of nature have also crept into our gardens. We find that orange, yellow, and bronze flowers become more prominent. Many shrubs and trees take on added interest as their fruits and berries ripen and color. Their leaves, like the aspen, also begin to color. The majority are yellow, but a few, like the sumac, euonymous and oaks, present vivid red and orange displays. Now is the time to observe these plants that transform a dull fall picture into a beautiful and colorful scene. Take note of the ones you would like to have in your garden to round out its period of color and bloom.

Now is a good time to take stock of your garden. If you haven't a garden notebook, start one. Record in it the successes and failures of the past growing season. This way you won't have to trust a rusty memory next spring when planning your garden.



Of course, all this color change indicates that winter is on its way and that we should prepare our gardens for it. Tender bulbs such as glads, dahlias, cannas, and tuberous begonias must be dug and stored. (See article on page 282.) Our shrub and perennial borders should be mulched, and in late October or early November our roses should be hilled up. More about this next issue.

Our watering practices should change so that our trees, lawns, and shrubs have an opportunity to harden up for winter. Water sparingly until



COMPOSTING



FALL CLEAN UP



the end of October, then give all your plants a good soaking. This may be the final watering, but don't count on it. Keep your hoses handy and water during any prolonged dry spells this winter.

When the leaves begin to fall there is always the question of raking. A few loose leaves will not hurt a lawn, but heavy mats of them will. Raking is good exercise and the leaves accumulated this way make excellent compost. (See article on page 295.)

Remembering last September and the heavy snow, it's time to take a close look at our trees. They have made excellent growth this season, much of it is at the extremities where it adds leverage to snow or ice. Corrective pruning can do much to eliminate the chances of storm breakage. Have a competent arborist check your trees now for poor structure and other defects. While he is checking he can also advise you on the advisability of dormant spraying for the control of scale insects.

Now is the time to plan, buy and plant the spring flowering bulbs such as tulip, hyacinth, narcissus, and crocus. You'll find an article on page 268 dealing with their care.

Don't forget your tools; clean and repair them before you store them for the winter. A light coating of oil on the metal parts will prevent them from rusting. If you store your hoses where they will freeze, be sure to drain them.

Our last suggestion is really an invitation. We would like to invite you to visit us at the Botanic Gardens House and become acquainted with our wonderful Helen Fowler Library. It's chuck full of good gardening books that can bring gardening pleasures into your homes during the bleak winter days ahead.

—PAT

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The Green Thumb

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Season's Greetings

OV.-DEC.,
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NOV.-DEC.
Vol. 17
No. 9

The Green Thumb

Colorado Forestry and Horticulture Association
Organized in 1884

"To preserve the natural beauty of Colorado; to protect the forests; to encourage proper maintenance and additional planting of trees, shrubs and gardens; to make available correct information regarding forestry, horticultural practices and plants best suited to the climate; and to coordinate the knowledge and experience of foresters, horticulturists and gardeners for their mutual benefit."

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Published Monthly. Sent free to all members of the Association. Supporting membership, \$3.00; Active, \$5.00; Contributing, \$10.00; Patron, \$25.00; Donor, \$100.00. Copyright 1960 by:

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MEMO

Calendar of Events

The Green Thumb Program—Every Saturday morning on KLZ at 10:15 a.m.

Floral Art Courses — Opportunity School. Every Thursday, 9 a.m.-

11:30 a.m., 1 p.m.-3:30 p.m., 6:30 p.m.-9:15 p.m. There is no charge except for materials.

FUN WITH FLOWERS

Workshop I—Botanic Gardens House, 909 York Street, 10:00 a.m., the third Wednesday of each month.

Workshop II—Lakeside Denver Dry Goods, 44th and Harlan, 10 a.m., the first Friday of each month.

Workshop III—Arapahoe County Fair Grounds, Littleton, 9:30 a.m., the third Tuesday of each month.



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Heart To Heart Talk From President And Trustees To The Membership Of The Colorado Forestry And Horticulture Association

By SCOTT WILMORE

President, Colorado Forestry and Horticulture Assn.

Arithmetic is a very simple science and there is no getting away from what it teaches. In our case we must admit that you cannot subtract more from a total than there is to begin with. In words of a bank account, you cannot spend more than you put into the account. If you want to keep your self-respect, you stop spending before it is all gone. Going into debt will simply put off the evil day. It will sound strange to some of you members to learn that we have been going into the red for over a year. Let us give you the accounting.

It was not always so. In August, 1953, to pick out a representative date, the Colorado Forestry and Horticulture Association had \$7,000 in a savings account. At that time we had better than 2,000 members. We had free quarters at Horticulture House and our overhead on personnel was \$601 per month. The publication of the Green Thumb cost around \$930 per issue on the average, and the advertising income averaged \$430 per month. Things seemed to go easily without any difficulties.

That situation, however, did not last. The finance committee was pointing out at times that we were spending too much on the Green Thumb, and a couple of times we had to cut down the total numbers below twelve issues per year. On two different occasions, good sized sums were taken from savings. On January 31, 1959, we had \$1693 left in our savings account and \$600 in the checking account; with a membership still around 2,000. Incomes for the first four months of 1959 were \$1608, \$1280, \$2320, and

\$953 respectively. It jumped up to \$5014 in May, due to special gifts and the Plant Auction. In the meantime, we had moved to the Botanic Gardens House, at 909 York (on March 15), where we have been paying \$100 per month rental; this being in addition to our other general expenses.

Now, let us jump to May, 1960. By that time our savings account was down to \$593.84 and the checking account was \$250.96. Salaries had increased to a monthly figure of \$963.33. Expenses totaled around \$1700 per month with incomes from January to April of \$1,329.20, \$1,181.42, \$1,088.94, and \$1,173.52, respectively. Memberships, however, were 2800 on May, 1960, and a Plant Auction was in the making, plus Look and Learn Tours. We had hopes that we would make out all right, even though the Colorado Garden Show with an attendance of more than 22,000 was a horticultural but not a financial success.

Then came the disillusionment. In spite of the Plant Auction which netted \$2,147.04, and the Look and Learn Tours, \$1,182.70, and May income of \$3,622.60, this was not enough to recoup our losses. We were faced with a constantly diminishing bank balance of \$2,918.85 in July, \$2,150.12 in August, and \$1,679.94 in September. Something had to be done and done fast.

A major proposal was made; one that had been mentioned a great many times, ever since 909 York Street became headquarters for all horticultural activities. Why not combine our activities with those of Denver Botanic

Gardens and thereby help everybody concerned? So that is what your Board decided to do. As of November 1, 1960, the assets of the Colorado Forestry and Horticulture Association, including our Green Thumb, information services, the Helen Fowler Library, the Herbarium, our physical assets (addressograph, typewriters, etc.), plus the good will of our membership, are turned over to the

Board of Trustees of the Denver Botanic Gardens; who in their turn are planning to continue these services for the benefit of the horticulturists and garden lovers of the area. So, we ask for your continued cooperation during this transition period. We are assured that the Green Thumb will reach you regularly in 1961, and that our major activities will go on. Yours for a bigger and better future!

HISTORICAL RECORDS

Among the prized possessions of the Colorado Forestry and Horticulture Association are old records of the Colorado State Forestry Association, which was organized in 1884. One bound volume contains a History of the Association written by the Rev. W. G. M. Stone, president from 1903-1916, and intended for publication. Following his death in 1916 no further action was taken. There are four books containing minutes of meetings from 1884 through 1947.

After looking over these records, Mrs. Agnes Wright Spring, State Historian of Colorado, said that they contain a valuable history of the forestry and conservation movement in Colorado for that period. Mrs. Spring offered the facilities of the Society for storing these records in air conditioned vaults, where they will be protected against fire, theft, moths, and deterioration. They will be available on short notice for study and as source material for writers and others interested in the conservation history of the state.

This offer was considered at a meeting of the Board of Trustees and a committee was authorized to proceed with arrangements for transfer. Mrs. Alexander L. Barbour and Fred R. Johnson went over the records on October 12, 1960 and they were deposited with the State Historical Society on October 14.

"Southwest Gardening," by Rosalie Doolittle in collaboration with Harriet Tiedebahl, is described as a book written in simple language for the garden novice residing in the Southwest—New Mexico and the states surrounding it. A copy of this was presented to the Helen Fowler Library of the Colorado Forestry and Horticulture Association by Mrs. Agnes Wright Spring, State Historian of Colorado, on October 14, 1960.



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Presidents Long and Wilmore discussing the merger documents.

AT LAST WE ARE ONE!

On November 1, we announced jointly the Denver Botanic Gardens and the Colorado Forestry and Horticulture Association had united forces.

This, we believe, will serve two chief aims: to avoid unnecessary duplication of effort, and to give far better service — under one roof — to the people of this area.

Headquarters for the new organization are at Botanic Gardens House, 909 York St.

We are all delighted that this getting together is now completed and are confident that the combined talents and experience of the two groups will enable us to do, jointly, a more effective job than either could have done separately.

We are already moving toward increasing our services and making them more widely used and known. To do so, we must launch a membership drive, immediately. Our goal is 1,000 new members by January 1, 1961 and a total membership of 5,000 by April 30, 1961.

We know you loyal readers of the Green Thumb will be our best salesmen. If each of you only brings in ONE NEW MEMBER, we would be not only *twice* as large but *more than twice as effective!*

Cost of MEMBERSHIP has been raised to \$5 a year. The increase is absolutely necessary — to cover bare cost of publication of "The Green Thumb"; and to expand the services of Botanic Gardens.

With your help in the membership drive, as well as your continuing interest in all things botanical and horticultural, we will develop the best botanic garden in the country.

Yours sincerely,

LAWRENCE A. LONG, SCOTT WILMORE

DID YOU KNOW?

Botanic Gardens House is used an average of 24 meetings per month. It is available at a nominal fee (to cover cost of lights and heat) for meetings of any group allied to the fields of botany or horticulture. Call Botanic Gardens—MA 3-1133, extension 428.

The orchid show in October, the first major flower show ever held at Botanic Gardens House, drew more than 2,000 people.

The Shelter House for the Children's garden across York from the main garden gate is practically complete. For details of the children's program (which proved a great success last year and we expect to expand) call Botanic Gardens House.

A series of courses are available at Botanic Gardens House—on a materials cost basis—the first of the season on indoor plants is just concluding; and on November 1st, Dr. Hildreth inaugurated a 12 part course (one each month), sponsored by the arborists of the area.

The Botanic Gardens Junior Committee, composed of a group of young women interested in gardening and The Gardens, was formed in August. Mrs. Mckintosh Brown is president.

It is little known that the Park and Recreation Department of Denver raises all the flowers planted throughout the city at its greenhouses located in City Park.

Each year beginning in late summer, plants are started from seeds and cuttings for the following year's display. This means that the plantings must be planned a year in advance. The planning of the flower displays is done through the Landscape Department in conjunction with the Supervisors of each District. When the final plans are made and the necessary number of plants determined, it is then the job of the Greenhouse Department to raise the plants.

There are 60,000 square feet of glass in this greenhouse, said to be one of the cleanest in the area. A total of about 190,000 plants are raised for the park system, Airport, Library, Hospitality Center, Botanic Gardens, State Capitol, Golf Courses, Water Department, and various other city installations.

—Mike Ulaski

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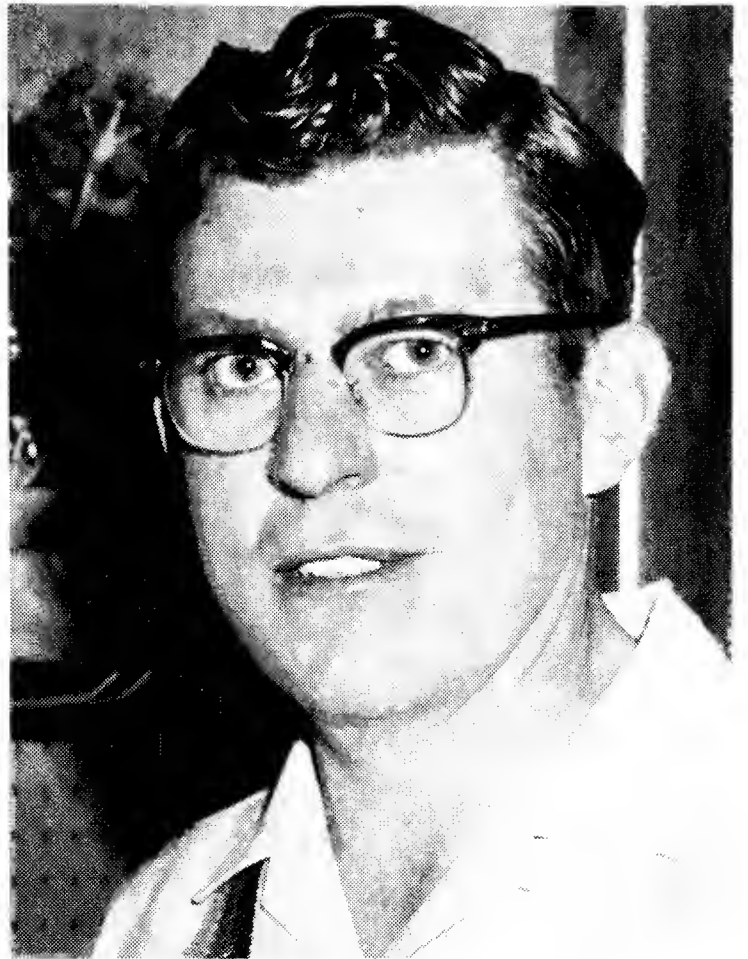
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HONORING

PATRICK J. GALLAVAN

All too frequently we wait until a person's life work is done before we give him the honor that is due him. But how much better it is to speak of our respect for and appreciation of a person's achievements at the end of each "chapter" of the continuing biography. So now that our "Pat" is going into a new field of activity, we have the good opportunity to wish him new successes at the same time we speak of our regrets that he is leaving his present position. For by the time this is in print, Pat will have been at work in his new position with the Parks and Recreation Department of the City of Denver.



Pat came to us with excellent qualifications for the type of work assigned him. He had a formal background in botany, having received both his bachelor's degree and master's degree from the University of Denver Department of Botany. In addition to his research experience in graduate study, he further did research on tree maladies while working in the Denver Forestry Department. There he contributed much to the study of fire blight control, treatment of chlorosis in iron-deficient trees, and in the identification of a new disease in cutleaf birch.

In addition to his education and experience, he brought with him a quality of inestimable value, his charming personality. Who can look into his friendly, smiling countenance and not be impressed by its straightforward, warm-hearted cordiality? He has done an enormous amount of good just by this radiating goodwill. Anybody would take his advice on horticulture on his honest say-so!

Pat has become known to untold thousands through his radio and television programs as the GREEN THUMB GARDENER. His accurate, "folksy" presentation of information has helped more home listeners than we shall ever know. He has been active in numerous other organizations, for example, the Denver Men's Garden Club where he has been President and the Garden Writer's Association of America where he has been Secretary. He has been a much sought-after speaker for garden clubs and has been one of the principal contributors to the spring gardening short-courses presented in various neighborhoods with the cooperation of the County Agent.

As Manager for the Colorado Forestry and Horticulture Association and Editor of the GREEN THUMB, he has done a "whale of a job." We do not feel that we have lost him entirely, as we expect to have his continuing cooperation and assistance in our endeavors. It will take much searching and real good luck on our part to find a replacement for him!



A LOOK FORWARD and a glance backward

By M. WALTER PESMAN

FROM time immemorial mankind has been fascinated and inspired by the recurrent rebirth in nature. An old plant dies; its seed gives rise to an even more beautiful one. Old leaves fall off; new ones arise in due time.

The fable of the phoenix rising in youthful freshness from the ashes of the fire which consumed it, was developed in early mythology.

This number of the Green Thumb may possibly be looked upon as the full-grown phoenix just before its renewal. Or shall we say that it represents the aspen glory preliminary to the next spring growth now in the making?

We have been assured from many sources that the Green Thumb will be continued in the union now being considered between the Colorado Forestry and Horticulture Association and the Denver Botanic Gardens. It may even blossom out in greater glory as a result of it.

Looking at its history we see a gratifying growth from a small eight-page pamphlet published February 1944 to a high-class magazine, gen-

erally of 36 pages but at times 52 pages, well spoken of by experts in the field of horticultural publications. At times we have blossomed forth in color as in the cases of the Lilac number and the Central City number.

First, George Kelly was the editor, then Pat Gallavan; both did a fine job. The Editorial Committee has been very helpful in procuring articles and in numerous other ways.

The first mast-head was borrowed from "Meet the Natives"; the next one, April 1944, was specially designed to indicate the objectives of the Colorado Forestry and Horticulture Association. Later the emblem of the Association was used to identify the Green Thumb.

The material of the articles in the magazine came from a great many sources. We may well claim that all the local authorities in horticulture, and a number of national experts had a share in making it outstanding.

Illustrations likewise came from many people and places.

Now let us look into the future. What can we expect, logically and reasonably? Horticulture is entering a

new phase in the region. Pioneering is giving way to fruition.

Here are a few figures to make us think: The Denver metro-area is rated as the third fastest growing area in the nation. By 1985 we may expect a population of 1,900,000, almost two million. In the meantime the average income is practically doubling and the leisure hours are certainly going to increase enormously.

What are these increased multitudes with money to spend and time to spend it in—what are they going to do with their leisure?

They can't all go to Europe or Hawaii. They can't all be expected to watch television six hours a day. They can't continue to drive around the countryside in their new cars at an increased rate and an increased speed. They'll get tired of crowded highways and of indoor time-killing.

Lord Bacon observed many centuries ago that gardening is an art of mature cultures. Since Denver is maturing, it seems most reasonable to me that more people will spend more time in the outdoors at their own home. Horticulture is one of the arts of the immediate future.

There is another angle to this forward look in horticulture. A number of us keep hammering away at the realization that "Rocky Mountain Horticulture Is Different." A gardener from New England, Virginia, California or the Northwest finds himself bewildered at the new conditions he must face here: arid conditions, alkaline soil, hot winter sun, irrigation as a "must."

The Green Thumb has been out-

standing in showing these newcomers how to adjust their skill to new problems. It has given information that can be taken at full face value, not with a "grain of salt."

There is a new crop of uninformed gardeners from year to year. It is a task to keep ahead of this ignorance, an ignorance often unbeknownst to themselves.

Once we realize the need of continued and increased information in horticultural matters for this city and this region, we can prepare for it.

May I indulge in a dream for the future in gardening here? I see a growth of well-designed individualistic and beautiful home grounds, typical of our climate, typical of our mode of living and expressive of our inheritance of this great outdoors. They'll make full use of our sunshine, of the charm of running water, of the possibilities of rock-gardening, of our native plants that have hardly been recognized so far.

We'll be leaders in the culture of certain plants that thrive best in our arid, bright climate and that may give new life to old plant breeding. We have already made a beginning with iris, petunias, lilacs, hemerocallis, penstemons, evergreens.

We'll show the world what wonders can be wrought in this new type of gardening, and what new introductions can be enjoyed.

The Green Thumb has been in the fore-front of horticultural education of the region. It is my dream that it will grow in stature and significance in the same proportion as the growth of population.

KROH BROS. NURSERIES

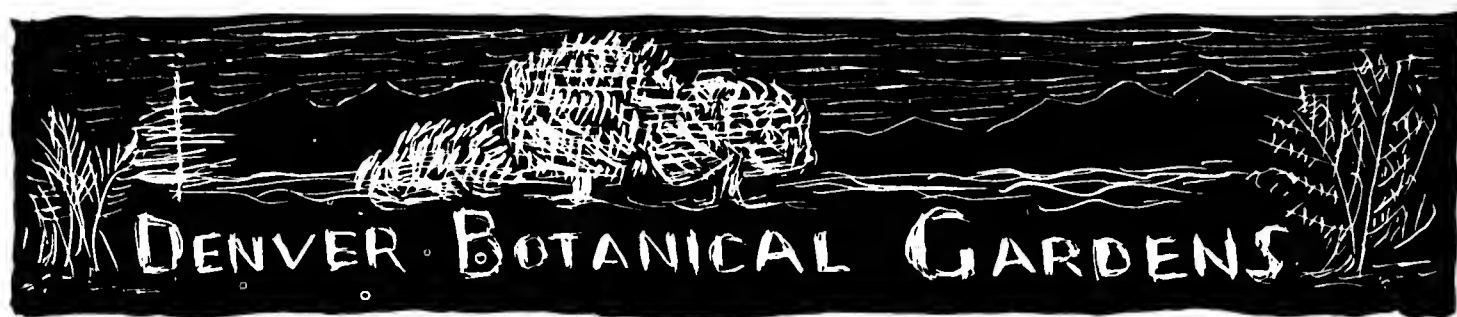
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HORTUS SICCUS (L.)

(*hortus*, a garden + *siccus*, dry)

By MRS. E. R. (KATHRYN) KALMBACH

VISITORS to Botanic Gardens House have sometimes been mystified when told the closets at the head of the stairs contain the "Herbarium." To some, this awesome word suggests some kind of morgue or secret place! Hence, the following definition may serve to dispel any secrecy as to what is stored behind those six handsome doors.

The herbarium is simply a classified collection of dried and pressed plants, gathered and kept for the use of those interested in determining the correct name of a particular plant. In the days of Linnaeus, called the Father of Botany, (1707-1778), it was known as a dry garden—*Hortus Siccus*. Today we call it an herbarium.

The herbarium, now at Botanic Gardens House, 909 York Street, was started about 1943, when the Colorado Forestry and Horticulture Association was housed at Horticulture House, 1355 Bannock Street, in Denver. At that time George W. Kelly was horticulturist for the Association, and he inspired a group of members who were particularly interested in learning more about our Colorado flora, to start a collection of pressed plants of the state. The writer, among others, on their mountain trips, began collecting and pressing the plants, and before long it was apparent that help would be needed to mount and classify these collections.

A number of members of the Home

Garden Club of Denver, and a few other interested people, responded to an appeal to help with this project. For a number of years, this group of workers met regularly once a week at Horticulture House to mount and label specimens. Several of these workers also became interested in collecting and pressing the plants.

In starting this little herbarium there was no attempt or desire to build a collection such as our Colorado and Wyoming Universities have. Its purpose from the beginning was merely to provide members of the Association a handy way to see some of the wild and garden plants of our region. However, small as was the beginning, the herbarium now numbers over 2,000 specimens.

Botanists at Colorado University at Boulder, Colorado State University at Fort Collins, and the University of Wyoming at Laramie, have always been most helpful in assisting our group of amateur botanists in the naming of our specimens.

We are fortunate to include in our small collection some specimens collected by the famed Alice Eastwood and other early botanists of our region. Some of these were acquired through a gift from Mrs. William H. Crisp, who obtained them from an early collection at East High School in Denver.

The various plant families represented in the herbarium have recently been rearranged in alphabetical order,

in hopes this arrangement will prove of assistance to those wishing to locate a particular specimen. We are happy to note that the Botany Club of Denver has found the collection of some use to their members. This very active group has also expressed their willingness to add to the collections as interesting plants come to their attention on their trips around the state.

The herbarium may be consulted at any time by members of the Associa-

tion, by application to our office.

The writer would like to pay tribute to the Home Garden Club members and others who gave such valuable assistance in the building of this small herbarium; to the members of the Colorado Mountain Club who assisted in the collections; and to some of our Association members who helped in a financial way, as blotters, mounts, and other supplies were needed.

WHAT'S COMING UP?

Lots of projects for which many committees are currently being reorganized and new ones formed. We need all the volunteers we can get. Call Botanic Gardens House with your committee preferences.

Some of these projects which need committee workers:

A membership drive to get 1,000 new members before January 1st and a total of 5,000 by April 30, 1961.

Invitations are being readied to invite new members to join. The association's pamphlet setting forth what you get from membership is also being prepared. Will you call Botanic Gardens House with any names of prospective members?

Letters inviting memberships are going out this week.

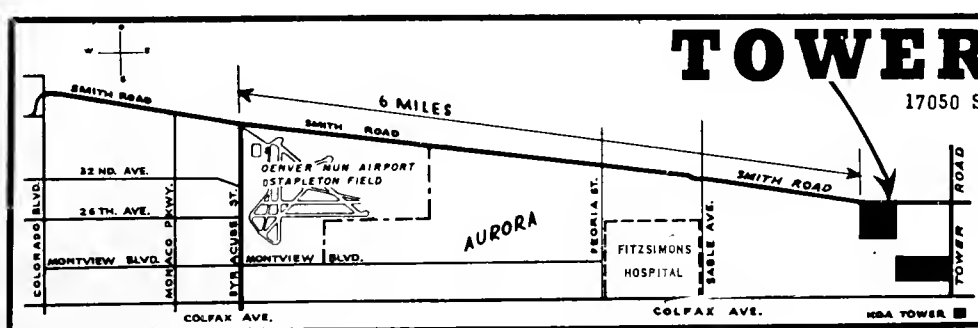
Gift certificates will be available for nurserymen who may wish to give memberships as Christmas gifts to some of their customers.

The new Botanic Gardens Vista on the east side of York, overlooking Cheesman Park, will be completed before Christmas at a cost of approximately \$7,000. A dedication is planned.

Plans are underway for the annual membership subscription dinner in February.

And though it seems a long time to Spring, we are already planning the Gardens' participation in the annual Garden Show.

The plant auction this year in early summer will be bigger than ever—held in the gardens and featuring the donations of the area's generous nurserymen.



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The Christmas Garden

By JANE SILVERSTEIN RIES

RESTRAINT should be the watchword for the Christmas garden gayness. With the easy availability of bright electric bulbs and extension cords there is a temptation to use these too liberally and so create a more or less circus atmosphere instead of one more in keeping with the gentle, deep significance of the event we are commemorating.

There are many simple ways of making the garden festive at the same time maintaining a soft mellowness in the decor.

The luminaria is one of the simplest of devices. They originated in Mexico; hundreds of them are used around the homes in Santa Fe and Albuquerque. A paper bag, 12 or 14 inches deep, some dry sand and a short candle are all that one needs. Roll the top of the bag down to make it firm, put in about three inches of sand and then stick a short candle in the middle. If you are thrifty and keep the short ends that are left over from your table candles, they are just

right for the purpose, but finger-size birthday candles will do nicely. Light the candle when it is dark and a soft glow is seen through the paper. Light them Christmas Eve and New Year's Eve especially. If you have gate posts they look gay on top, or place them on the steps leading to the front door and along the walk.

Small silver Christmas tree balls can be stuck on the Yucca points, or on the end of the dried twigs of the shrubs. A star is, of course, a very significant and beautiful symbol of the Christ's coming. If there is a rather remote corner in the garden, a star can be snuggled in and lighted electrically, or, better still, with reflected light.

Sometimes a window opens out on a rather untidy spot, the ugliness of which had been concealed all summer and fall by the leaves. It is not too late to press leaves and paste them to the glass in a good design, then you forget to look out at the empty shrubs, and see only the rather nice

substitute for the living greenery. The large *Funkia* leaves make a good showing to start the design; then add some smaller leaves and perhaps a pressed flower or two. It is a splendid chance for you to use your talent and imagination.

Of course there should be a Christmas wreath or other door decoration. Here, too, one may improvise and create perhaps a sheaf or rope of material to be found in garden or wilds. Seed pods of all kinds, pine cones and greens—all may be combined and enjoyed in the muted tones to which they have naturally faded, or they can easily be sprayed, preferably all one color.

Arrangements can be made to enhance the fireplace, gilded pods and

greenery are lovely here. Or pressed leaves can be arranged on a piece of plywood to fit the front of the grate to cover the dark hole if a fire is not desired.

A small tree stuck into a large flower pot and decorated with perhaps all blue Christmas balls gives a soft glow to the front door; the entrance light reflects the mistiness of the balls.

There is no end to the gracious decorations that can be used in and from the garden in this wonderful season. Keep in mind the sweetness of the occasion and the beauty to be found in the many dried materials provided by Mother Nature; you will have a memorable, as well as a Merry Christmas!

IN OUR LIBRARY

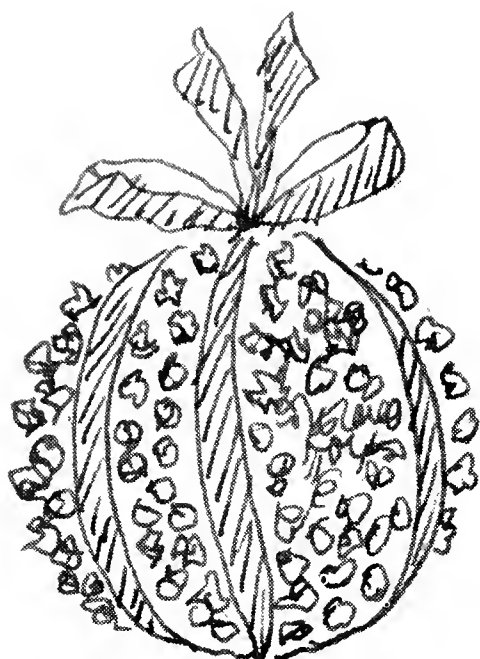
THE GRASSES: EARTH'S GREEN WEALTH, Alma Chesnut Moore. Macmillan, 1960.

Out of a total of more than 2 hundred thousand kinds of plants which bear seeds, the grass family consists of more than 5,000 distinct kinds. Were it not for these grasses, civilization as we know it would not exist. It is also interesting that less than a dozen kinds of these 2 hundred thousand kinds of seed plants furnish the main starchy foods of man. Mrs. Moore has written about the entire grass family, but discusses each of the grains "... at length as to possible origin, methods of cultivation and use, botanical characteristics, and many very interesting facts which to most of us are new." She "... has brought together in convenient form, and from various unrelated fields of activity, a surprising amount of highly interesting matter about grains and grass that is

well worth knowing." O. E. Jennings, Preface.

THE COMPLETE BOOK OF BULBS, F. F. Rockwell and Esther C. Grayson. American Garden Guild and Doubleday, 1953.

A practical manual on the uses, cultivation, and propagation of more than 100 species, hardy and tender, which the gardener can enjoy outdoors and in the home. The first section of the book, *Bulbs For Your Garden and How To Use Them*, covers why and how to use bulbs; what is a bulb?; how bulbs grow; and the cultural requirements of bulbs. The second part deals with the more important groups of bulbs, dividing them into spring, summer, and autumn flowering. The final section is a catalogue of bulbs, giving descriptions and cultural requirements for over 100 species and a list of bulbs for special purposes.



Pomander tied with ribbon.

POMANDER BALLS

By KATHRYN KALMBACH

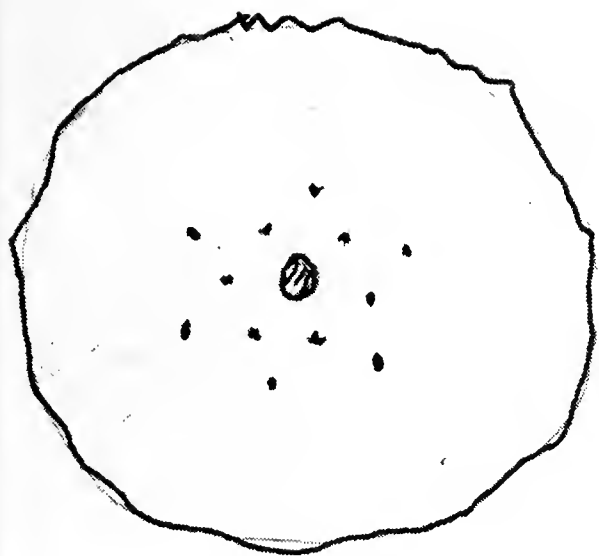
DID you make pomander balls for Christmas? Or perhaps you received a pretty pomander from a friend. And perhaps you have wondered where the pomander or spice ball originated.

In the old Herbals it may be noted that the priest or pastor of the church commonly had a spicy pomander hung from a chain, which he could unpretentiously pass before his nose when the closely packed congregation contaminated the air. These early pomanders were not the ones we know today. They were little metal cases or balls with tiny perforations, in which the priceless spices and perfumes of the day were carried. They were often gems of the jewelers' art and were prized by the elegant ladies of the day. Many believed them a supposed safeguard against infection, or even bad luck.

It remained for the early settlers in America to devise a substitute which could be provided with much less cost. The early pomander balls of our great-grandmothers were also made to fill a much different need. Their pomanders, made of apples and citrus fruits stuck with cloves, were used to provide a clean spicy fragrance to the linen chest or closet. They were also believed to be a deterrent to moth damage when hung in a clothes closet, a debatable virtue today.

But enough of history—let us see how to go about making pomanders, which can provide pleasant occupation on a winter day.

Any of the smaller citrus fruits, oranges, lemons, or limes, as well as small hard perfect apples, make nice pomanders. Avoid using grapefruit, very large or naval oranges or over ripe apples, as these may "cave in" during drying. Also needed will be a supply of whole cloves (buy in bulk if possible) and a sharp pointed instrument such as a small awl or even a sharp nail. A very large darning needle pushed through a cork for a handle would be good, too. Now, starting at the stem end of your fruit, punch a row of holes in a circle around the stem, about one-fourth inch apart. These punctures should pierce the skin of the fruit, but should not be so large as to allow the cloves to fall out. Insert a whole clove in each of these first holes and then proceed with a second row of holes, alternating with those of the first row, and keeping them at least one-fourth of an inch apart in every direction. (In drying, the cloves will be brought closer together, so it is important to allow for this shrinkage.) Having now established your pattern, proceed to place your cloves around and around your fruit, until completely covered. Your pomander ball may now be set aside to dry, a



Suggested pattern to use in placing cloves.

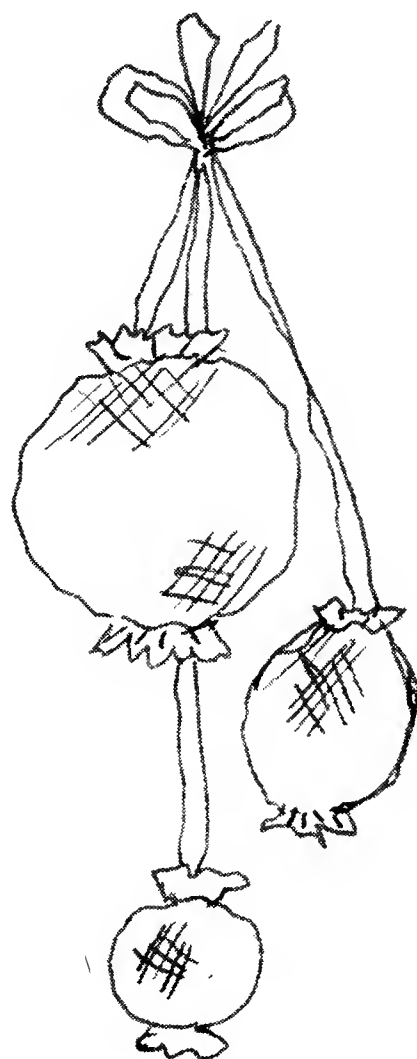
process which requires two to three weeks in our climate. Some like to dust the balls with powdered orris root, or a mixture of orris root and ground cinnamon, before setting them aside to dry.

When the fruit is dry and slightly hardened, the balls are ready to be decorated. They may be covered with net or lace and trimmed with ribbon, or similar materials. They may be criss-crossed with ribbon and hung by a ribbon loop without other covering, but the net cover serves to prevent any shedding of dry particles as the fruit continues to dry. A cluster of orange, lemon, and lime, covered with dainty pastel nets and ribbons, to be hung in a clothes closet, makes a welcome gift for a friend. Or a single ball nicely trimmed is a fragrant addition to a linen closet or lingerie drawer.

Another nice conceit is to make a number of pomander balls, and when dry, instead of trimming, place them in a tight container, or plastic bag to

preserve their fragrance. Bring them out when guests are expected, heaping them in a pretty bowl or basket, and enjoy their fragrance throughout the evening. At holiday time, a few colorful Christmas balls among them will add to their beauty.

Note: A recent magazine article stated that pomander balls could be dried in a 300° oven for four hours, when speed is needed. Your author does not recommend this, and feels that slow drying is much to be preferred.



A closet string of orange, lemon and lime.

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PLANTERS

Those Contractors' Nightmares!

By SUE KELLY

THOSE inside planters which the contractors have so obligingly worked into the house plans, are really "plant-mares"! For many years the plant situation remained unchanged—no plants, other than in the old fashioned bay-window or in pots on plant tables or stands, and of course, the window sills! Then, along with contemporary houses, contractors suddenly felt the need for growing things, and planters sprouted all over the house. Planters were put in hallways, as room dividers, under and in windows, especially those hot, west and south windows, over book cases, near fireplaces, in the darkest parts of the room—well just anywhere, and seemingly the more the merrier! In one home, there were two six-inch planters side by side, nine feet long and right beside the front door entrance, making a semi-entrance hall, which caught all

the cold blasts right out of the north! There was a planter on either side of the fireplace, another dividing the kitchen area from the family area, another between the dining area and the living room, plus for good measure, two in the bathroom. Those were all I saw. There may have been more! What would you do with such an array?

I think they have calmed down a bit now, so I won't worry about those not built—or those to be built in the future. Plants are a normal decorating item and we should treat them as such. The different leaf textures and sizes are as much a part of the room as are the curtains and furniture. The right plants are wonderful and should be used. They should be in scale with the rest of the house, and not little, fussy, and too many. A combination of large plants plus a few smaller ones is very



The different leaf textures and sizes are as much a part of the room as the curtains and furniture.

good. In the dark, unlighted areas, use plants that are undemanding and will grow with little light or artificial light. Depending on the lines of the room, the much abused sansevieria is a wonderful plant. It grows slowly, increasing in size, in height, and in girth as well. Some plants bloom, also, if treated right, and are very fragrant. Try them sometime but be sure they are healthy and happy, not dusty, dirty and neglected! The sheffleras are another group of plants that will take a lot of abuse, continuing to grow new leaves and adding a leaf to the stem as the new ones develop. They might start out with three, the next ones have four or five, then seven and so on. Again, keep them healthy and growing and there is nothing better. Try using some variegated foliage plants in these dark areas to lighten them. A nice way to keep interest is to leave a space for potted blooming plants which you will periodically receive and just leave them there until they have finished blooming and then take them out. Driftwood used with lichenized rocks is another way to add interest, and in this wonderful country of beautiful weathered wood, I shudder to think of all the man-made totem poles that are being used!

Plants to be used in hallways depending on the light available could very well be the following: 1. Philodendrons, both the vining or climbing types, the trailing varieties and those

called the self-heading varieties, such as Selloum. 2. Shefflera. 3. Aralia. 4. The Ficus family; mainly, Decora, Pandurata, Variegata, and Elastica (the common narrow leaf). 5. Ferns. 6. Palms. 7. Peperomias. 8. Pandanus. 9. Dracaenas. 10. Bamboo. 11. Dieffenbachia. These plants could be used in many different ways, graduating them for size or interest, in room dividers, and some window planters, depending on light; east or north windows would do nicely. The planters in south or west exposures would take an entirely different type of plant. Those which are very floriferous usually do the best, for in order to bloom well, plants must have sunlight. Geraniums, roses, both floribundas and miniatures are excellent. Most of the annuals will do very well if used as pot plants and only dwarf varieties rather than taller growing annuals. Chrysanthemums are always good in hot window planters, but be sure to provide enough water, and they would appreciate some shade in the very hottest hours of the day.

Flowers received as gifts—hot house grown, may be incorporated very nicely in most planters. The azaleas, cinerarias, hydrangeas all full of bloom and vigorous may be tucked into your planters, and be no extra care. All the potted bulbs may be used in that way also. In east or north light planters, African violets or St. Paulias may be used for a wonderful show. Just be

sure you have the right situation and care for the plants accordingly.

Many planters were built originally to be planted directly in soil, and that is about the size allowed. They were made four to six inches wide and six to seven inches deep if you were very lucky! What kind of plants were they thinking of? Some were made quite large, in rectangles, squares, triangles and free forms, but all invariably were shallow! Again, what was supposed to grow in them? Tall, trailing or climbing plants need room to establish good root systems or they will need all kinds of supports and then all you have is a number of odd sticks of various lengths instead of happy plants. The nicest way, to my way of thinking, is to provide enough room for the plants by making the planters deep enough to accommodate up to 9 inch pots depending on the area, and then just arrange the pots to best advantage, cover them with perlite or turface, or some such material which is sterile, and water retaining. This makes a much more desirable planter, and then, should some plant become too large, look sick or for any other reason become undesirable, just take it out of the planter without disturbing the root systems of

all the rest of the plants. This is a much easier way of maintaining healthy plants, for sometimes, in spite of all you can do, you will have an infestation of aphids, red spider or mealy bugs, and plants may be taken out to spray or for washing. Trailing plants may be used to add interest over the side of the planter. Ivies, in various forms and colors, nephthytis, hoyas, grape ivies, to name a few, all trail beautifully.

In the hot, dry atmosphere in our homes, the cactus and succulent plants are a welcome addition. Some large planters in entrance halls and rooms with a transparent background are most attractive with a pattern such as only the tall cacti, agaves, ocotillo and yuccas can make. Correctly lighted, I don't believe you could find anything more attractive, a picture at all times.

I've mentioned so many things which may be used in various situations, and you may well ask "what can't be used?" You are limited only by your knowledge of plants and plant material, their care and maintenance, and the supply of plant materials. Use your imagination and have fun!

BULBS

Spring flowering bulbs can still be planted providing the ground is workable. Or, you might try forcing a few of them, such as narcissus, for winter bloom indoors. Please don't forget the stored bulbs of glads, dahlias and begonias. They should be checked occasionally throughout the winter for signs of rot or dehydration.

A Viking legend has it that the Lord sent his three messengers, Faith, Hope, and Love to aid a missionary by seeking out a tree for lighting that was as high as faith, as eternal as hope, as wide spread as love, and which bore the sign of the cross on every branch. After due consideration, they selected the balsam fir as the tree most nearly meeting these specifications.

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THE GLENMORE ARBORETUM

By ROBERT E. MORE

MARY H. BANCROFT purchased an acre of land in Buffalo Park, Jefferson County, Colorado, in September 1887. She and her family camped there, summers, in tents, until 1895, when she built a log cabin. It was her summer residence until her death in 1940.

I married Mrs. Bancroft's daughter Alice in 1916 and we started acquiring adjoining acreage immediately. By 1930 the original acre had grown to 75 acres. A beautiful Glen, with a series of ever-running springs runs through the entire length of the property. The construction of trails along the little stream in the Glen was soon started, and we had a rustic sign made for the front gate, "Glenmore." Because there was, in this area, every type of soil from wet, completely shaded, black loam in the creek bed, to dry, ever-sunny, almost sterile disintegrated granite on the hilltops, obviously countless types of native flora could find conditions to their liking, so in 1930 transplanting of native trees, shrubs and flowers was commenced. As no one had ever attempted to ascertain in detail what conifers would and what would not grow in Colorado, a collection of conifers from all areas in the world where somewhat similar climatic conditions prevailed was commenced in 1933. About 1940 vegetative propagation of individual conifers that were especially beautiful and hardy was undertaken and these three phases were continued until September, 1958: collecting native deciduous trees and shrubs and native wild flowers; trying out every type of conifer from *any* area where conditions were even faintly similar to those at Glenmore; having grafts made of especially beautiful and hardy conifers, wherever seen.

In 1945 five acres of thickly wooded native Ponderosa Pine were cleared and fertilized, irrigation water was piped in, native grasses were planted, and trees were there transplanted from the "nursery" where they had been growing for a number of years, and from an experimental plot in a Denver nursery where seedlings and grafts were first planted, when acquired. The "Glenmore Arboretum" was under way.

Tougher species of conifers, and all of the shrubs and the deciduous trees were planted along the Glen and about the cabin. In the cleared, fertilized and irrigated "arboretum" area, conifers that couldn't endure, before getting established, native conditions of poor soil, little water (only 12 inches annually), and continual winds, were planted. Of course groupings were made of pine, fir, spruce, douglasfir and juniper, and the exotic hemlocks, falsecypress, arborvitae trees, etc., were planted where it was felt they had the best chance of survival. In 1950 an additional 40 acres was acquired along the back extension of the Glen, and labelling and mapping of all woody plants was completed.

In June 1958 I decided to retire and move to California. Glenmore was not a place to manage 1500 miles away and it was sold, in May 1959, to Lee and Mary Johnson of Denver. Lee's family had owned adjoining acreage for many years, and while Lee and Mary had, up to then, made no detailed study of either conifers or native plants, they had tramped this area with the Mores countless times, had even been interested in all new acquisitions from time to time, and they intend to maintain the premises in their present condition, and permit visits to the Glenmore Arboretum of all persons

seriously interested in Glenmore's plantations.

In November 1958 there were at Glenmore 262 varieties of conifers, 83 varieties of deciduous trees and shrubs and broadleaf evergreens, and 226 different wild flowers. Glenmore's original acre of land has been fenced since 1895, and twenty-five surrounding acres have been fenced for over thirty years. Native grasses, therefore, were long protected against grazing, and twenty-six species have been identified.

A description of the Glenmore Arboretum appeared in "Arnoldia," of the Arnold Arboretum, in December 1945, and I have also described many of the conifers in my "Colorado Evergreens," Revised Edition 1949, Denver Museum of Natural History, in articles in "Plants and Gardens," Brooklyn Botanic Garden, summer 1950, in the "Green Thumb," Colorado Forestry and Horticulture Association, for March 1956 and April 1958 and in "Arboretum Bulletin," University of Washington, spring 1957.

I shall not enumerate the native wild flowers growing at Glenmore. Most of the types described and pictured in "Colorado Wildflowers" by Harold D. and Rhoda Roberts, and the subsequent volume by Rhoda Roberts and Ruth Ashton, both published by Denver Museum of Natural History, grow at Glenmore, and many others, besides. Harold took many flower pictures at Glenmore.

The number of varieties of conifers growing at Glenmore is quite amazing, when climatic and soil conditions there are remembered. It is in Rehders Zone III, the average minimum temperature being -20° to -35° F. In February 1951 temperature went to -50° F. The altitude is 7000 feet, annual precipitation, as has been stated, 12 inches. Hard winds blow all year, temperature changes are very rapid, and the soil, for the most part, is a very lean disintegrated granite.

It is not possible here to comment specifically upon all of the trees growing at Glenmore. A few generalizations may be appropriate, however:

Abies concolor and all clones of it prosper at Glenmore. *A. lasiocarpa* is happy there if given moisture and shade. (But it does not like Denver.) Other firs "struggle" in Colorado, only an occasional one surviving.

The Glenmore clone of *Chamaecyparis nootkatensis* is the only False-cypress that will probably still be alive, five years from now, at Glenmore.

Most junipers prosper any place in Colorado. *Juniperus virginiana* does not like the mountains, however.

Colorado is not too good an area for many of the spruce species. Of course *Picea pungens* is at its best here, either at Denver or in the mountains.

Many pines enjoy our conditions. Much further experimentation should be done with this group.

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The Colorado variety of Douglas-fir is a splendid tree, and were it not for its being a host for the spruce-gall-aphid (which disfigures most spruces) would merit more extensive use.

Two yews—*Taxus cuspidata nana* and several varieties of *T. media* are valuable in Denver (when planted where afternoon sun and prevailing winds may not strike them). A visit to the group on the north side of the Museum of Natural History will satisfy the most skeptical. And the same is true of the tougher clones of *Thuja occidentalis*. But don't expect either Japanese Yews or Eastern Arbor Vitae trees to be good mountain plants. *T. orientalis* can't "take" even Denver conditions.

Hemlocks are for the patient ones only. There are few in Denver and only one has survived at Glenmore.

Comments on Glenmore's deciduous woody plants are unnecessary. Being virtually all "natives," they like their surroundings.

The woody plants now growing at Glenmore, the great majority of which are well established, are the following: (Technical names are according to *Rehders Bibliography of The Cultivated Plants* and popular names according to *Standardized Plant Names*). On the conifers I have sometimes given ratings. "1" means that the plant, in my opinion, "has everything." Those rated "2" or "3" also are worthy of use. See Appendix.

DECIDUOUS TREES

Those of you in urban or rural areas who are growing fruit trees should protect them from rodent and rabbit damage by placing a cylinder of hardware cloth around the trunks. Now, also, is a good time to remove trees that have out-grown their location, or ones that have died this past season. This operation can be done with little or no damage to lawns and flower beds. For winter enjoyment of trees, look for differences in bark color and the identifying silhouettes presented by each specie.

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COMPOSTING

BY MRS. JOHN SCOTT

Colorado Federation of Garden Clubs

Hello Everybody. Here it is another year, Federation-wise, and I am happy to continue my coffee-cup chats.

FIRST, last year's state garden show is staging a repeat performance. But something new has been added—a competitive flower show. Mrs. George Kelly is the general chairman. Her steering committee: Mrs. Ed Honnen, Mrs. Jess Gibson, Mrs. J. V. Petersen and Lee Ashley. The show is scheduled for March 26 to April 2 inclusive. The design division will be changed several times, permitting more exhibitors to enter, assuring fresh plant materials, and offering the public a change of scene.

While in Missouri recently, I visited Shaw Gardens, which according to the St. Louis Chamber of Commerce "... contains the largest collection of plant life in the western hemisphere. It is equalled only by the famous Kew Gardens of England." I walked, with pencil and pad, for six hours. An idea for our own Denver Botanic Gardens might be the book store shelved with about every gardening publication possible from single sheets ("Hardening Hints," ten cents) to books, including colored postcards. This "Information Center" was staffed with Federated Garden Club members who were happy, helpful, and hospitable.

Another attraction at Shaw Gardens was the Cactus Society Show. This competitive plant show had some 35 well-filled classes. The horticulture was all potted, naturally. The artistic division had an entry card (about five by ten inches) beside each arrangement listing the plant materials used, and the idea, mood, feeling or story the designer hoped to express, in addition to the usual information.

Some of the classes: Cacti are Different; Growing Cacti is a Pleasant Hobby; Some Cacti are Edible; Cacti are Still New to Some People; Cacti are Tiny—suggesting a nursery rhyme; Cacti Grow in the Desert—using a "desertarium" instead of a terrarium; Cacti Do Bloom—using *other* flowers; Succulents are Pretty Corsages.

In the horticulture division, the collection classes called for certain containers, such as animals, doll heads, novelties, spoons, strawberry jars, wishing-wells, brandy snifters, fish bowls, bottles, fruit and vegetable ceramics, kitchen (cups, teapots, stemware, etc.), natural (rocks, shells, woods, etc.). The public commented: "Why, I've got a 'horse' I could use like that." "I'm going right home and find that banana dish." "Wish I hadn't given my old tea-kettle to the Good Will," etc. Perhaps the underlying idea was that everyone had a container a cactus could complement. It was certainly a challenge to the grower-designer to choose a container to accent the cacti.

It re-emphasized the importance of annual shows with more or less permanent schedules, because to accomplish such specimenship takes months, not weeks.

And the hosts—they were men when I was visiting. They wore large ribbon badges and stepped up as soon as a spectator entered their assigned portion. If the guest had no questions, they pointed out specimens of special interest, handed out pertinent publicity (folders, etc.) and made each person feel wanted. Maybe it was just that southern hospitality, but it's cacti for me, and the rest of my house plants can-go-to-pot.

Still on the shows, more of you

should plan to enter our state show in Pueblo in 1961 — open, of course. Judged by the Federation, the personnel is just perfect, at least, that's the consensus of those around-the-staters who exhibited in '60. First, the exhibitors were met with a *smile*, and *helped* unload—some had box upon box of arrangement materials. Then, they were given large *tables* upon which to make their arrangements. *Water* was within reaching distance in large cans—looked like new garbage, and huge *waste-buckets* were nearby, too. The *advance-entry tags* were brought to the exhibitors—no standing in line, wasting precious time, and the *placement committee* was on hand to guide (and help carry, if permitted) the finished design. Everyone was soft-spoken and most cordial. All this is hard to believe, I know, but go down in '61 and see for yourself.

Furthermore, you'll meet old and new friends there from Southern District's Federated Garden Clubs: Air-lane, Beautifying, Broadmoor, City Park, Cloud City, Community, Corona Park, Hillside, Hobby, Park Hill, Pikes Peak, Skyway Park, South Side, Spanish Peaks, Trinidad, Ute Pass.

Popular people, too: C. P. Fugate, Colorado State Fair's manager; Howard H. Giltner, floriculture supt., assisted by Jacquelyn Bollacher. Then, Mrs. W. M. Fleischer, the Federation's third vice-president, and many others.

And a corsage to Mrs. John Sobiella, Colorado's First Director, appointed by Mrs. Houston Reusch, Founder-Director of the National Corsage Club (better known as the Gladys Reusch Corsage Club) with headquarters at St. Petersburg, Florida. Mrs. Sobiella (386 North Windermere Ave., Little-

ton) is available for demonstrations and workshops. She will be glad to assist any group (minimum six members) in organizing corsage clubs, not only in Colorado but nearby states.

Mrs. Hayes Neil, widely known herbalist, would like "Fun with Horticulture" workshops patterned after our arrangement work centers. Any takers?

Whether you call them permanent plants or floral fakes makes little difference. Artificial flowers are in, and perhaps to stay. But I'll wager we'll never say "Come over and pick all you want" or "Sure, you may have a slip (coleus, etc.)." One of the joys of gardening is giving.

Giving advice can be a joy, too. Quoting from Zelda Schulke's column "Ask Us Another" in Ohio's *Garden Greetings* is a question and answer applicable in Colorado, too:

"Q. I sometimes hear flower arranging called an art and sometimes a craft. Which is it and what is the difference?"

"A. Flower arranging as it is taught today, for the most part, is a craft. But it has the potential of being a fine art, and it will be when we can completely *free it from the man-made rules* that have hampered its progress as an art. *Craft*, skill in manual endeavor, following a set of rules and often repeated over and over as in knitting a sweater. There is a dead end in a craft—an ultimate can be reached. *Art*, the application of skill, taste, and sensitivity in an expression of beauty. In an art *each thing* you do *must be a new experience*, if you repeat it becomes a craft. There is no ultimate in art."

Merry Christmas.

In Memoriam

At press time we were deeply saddened by the death of our beloved Helen K. Fowler on November 4. A more fitting tribute to this friend and benefactor will follow in the January-February issue.

THROUGH THE MOON GATE

By MRS. B. B. BUFFUM

Home Garden Club

ISN'T that an intriguing title? But no more so than those beautiful flowers one would find if he were to really go through a moon gate into a Chinese or Japanese garden. Yes, you guessed it, I'm talking about the chrysanthemum.

Of course one does not need to travel to the Orient to enjoy chrysanthemums, for today there is hardly a garden in the United States where at least one of the thousands of varieties of this interesting flower could not be found. Primarily they are of Chinese origin although Japan and India have also contributed many species. The Chinese mums have large blooms somewhat resembling a peony. From India came the small pom-pom types, and from Japan came the beautiful, large, curly leaved ones that we associate with football games in the fall.

It was interesting to note that after 2000 years of cultivation, it wasn't until 1933 that the first promising hybrid, called Mercury, was introduced. We now have mums in a variety of brilliant colors, interesting shapes, and sizes ranging from the tiny button mums of one inch diameter to the huge "show" mums which are often eight inches or over. Some of the other well-known plants belonging to the same family are the feverfews, pyrethrums, marguerites, and the shasta daisy developed by the late Luther Burbank.

Although the season for indoor

chrysanthemums—grown by florists—is quite short, they still rank fourth in importance in the United States as a commercial flower. Well over \$500,000 worth are used annually.

The chrysanthemum has many good features which make it a desirable plant for our gardens and perennial borders. It is one of the few perennials which bloom late in the fall so is good for keeping color in the garden until frost, and many types will still be blooming long after the rest of the garden is dead. As I mentioned before, its great variety of color and size make it adaptable to most any type of garden. It makes very good cut flowers which last a long time in arrangements in the house.

Plants may be purchased in the fall and planted in full bloom. However, if planted in the early spring the roots will have more time to become established before the ground freezes and will therefore produce stronger plants the next year. It is quite simple to start new plants from cuttings. Sometime in April take tip cuttings from the best shoots of the best plants available, 4 to 5 inches is the best length. Then strip off the leaves from the lower half and insert each cutting in either sand or vermiculite. Keep them moist and in about 3 or 4 weeks you will find that they have good roots about an inch long. Your little plants are then ready to be put into pots or right out in the garden. They like sun and

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plenty of water, especially when first planted, and should be taken up and divided every year or two. To make strong bushy plants you should pinch off the tips when they are about 6 inches tall and continue doing this periodically until about the first of July. Pinching out some of the lateral buds will give larger blooms.

Here are a few interesting facts about the chrysanthemum which are a little more in line with my glamorous title:

The chrysanthemum is the flower for the month of November.

A drawing of a chrysanthemum is

the symbol of the Japanese Emperor.

What were probably the first flower shows began in ancient China as chrysanthemum shows.

One of the most popular festivals in Japan is celebrated each year in October and is called kiku-no-sekku, or Feast of Chrysanthemums.

So, even if you don't happen to enter your garden through a moon gate, you can still get a little touch of the exotic Orient just by planting some chrysanthemums.

Seasonal Suggestions

This is the month of Evergreens. Their color and place in the landscape bridge the winter gap between summer and spring. At this season they are not only the dominant feature in the garden, but in the home as well, when they stand bedecked with tinsel and lights at Christmas. This is their shining hour. Theirs is the symbol of Christmas.

It is also a time for gardeners to relax, that is if you haven't forgotten to hill up your roses or haven't had time to plant your spring flowering bulbs. Of course, Christmas preparations will take up some of the slack time, but a good gardener should find some time for reading, now and in the wintery months ahead. This is a gentle reminder that, as a member of the Association, you have lending privileges at the Helen Fowler Library at 909 York Street. This excellent library contains a great many books on all phases of gardening, and is open Monday through Friday from 8:30 a.m. to 5 p.m. Whether you are interested in roses or iris, bugs or plant diseases, landscaping or rock gardens, you will find an appropriate book in our library.



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By WILLIAM H. LUCKING

*(As told to members of the
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Dial your favorite nurseryman or tree serviceman now. He has select trees that give shade and can travel! With his facilities and experience he knows the proper digging depth to ensure preserving tree roots in the proper size ball of earth, how to wrap and bind the ball, and how to handle the tree so it gets into its new location in sound condition. As soon as trees are completely dormant (have lost all their leaves), preferably during the winter months, most trees can be moved safely; in fact, it's almost like sleep-walking, in many instances the tree doesn't know it's being done — it's just moving from one bed to another.

Almost any tree can be moved when dormant except birch. Any birch more than 1 inch in diameter must be balled and moved between the time its buds start swelling and its leaves are one-

third ultimate size. Birch should be dug and replanted immediately. Although big trees that move advantageously are hard to define, honeylocust, elm and maple move readily. Oaks larger than 8 inch caliper are very difficult to move. Horsechestnut, walnut, Kentucky coffeetree, large hawthornes and multiple-trunked hawthornes are difficult. Among the difficult and very difficult trees, those 2½ to 4 inch caliper and the hawthornes 2 to 3 inch caliper move easily with a ball of earth. Flowering crabs less than 1½ inches in diameter may be easily moved bare root in spring. Crabs and the other small ornamentals as golden-raintree, mountain ash should be balled if more than 2 inches in diameter. A tree 12 inches in diameter that moves easily will need a 9 foot ball of earth.

Due to their fine root system coniferous evergreens must be moved balled and burlapped. Evergreens with 14 to 16 inch caliper trunks may be moved but involve some risk. Incidentally, in our climate tree roots seeking moisture grow much deeper than in other localities where they have greater surface root action, hence the need for deeper balls. In other areas balls are formed wider and more shallow.

A frozen ball is necessary only if soil will not adhere to the tree roots. If the tree is growing in very sandy, gravelly, or extremely dry soil the tree

is balled, thoroughly soaked, and if weather conditions are unsuitable, dry ice is used to freeze the ball.

In transplanting a big tree dig the hole at least two feet in circumference beyond the perimeter of the ball. Then back-fill with good loam mixed with peat. Plant big trees four inches below the original ground level; smaller trees, two inches lower. Water well, mulch with leaves, straw or peat. If the winter is dry, water so the roots will not dry out. It is not necessary to root feed for at least a year after transplanting; let the tree form fibrous roots first.

Cut back and shape deciduous trees to compensate for loss of roots. Wrap trunks and first lateral limbs with tree wrap, burlap or old army surplus camouflage screen. In pruning remove some branches entirely and trim some tips. Evergreens need no pruning. Trees need not be set as they grew in the nursery with north to north; plant the tree to conform with the landscaping—when planting next to a house, turn the sparse side of the tree toward the house. (Want to argue?)

Trees should be guyed as soon as planted to protect against strong winds. Some use eyes screwed into the trunk

of large trees. In guying smaller trees, the use of hose with wire running through the hose is preferable since the use of eyes sometimes can be detrimental to the trunk. Guy wire may be removed after the first year on smaller trees; the wires should be left two years on large trees and evergreens. Evergreens are slower in establishing their fine root system, too, their density offers more wind resistance.

Incidentally, often a 2 inch tree moved bare root will soon catch up with the same variety if moved bare root with a 3 to 4 inch trunk.

Once in a while a large tree must be moved in late spring after the tree is in leaf. By spraying with Wiltproof, a milky protective substance that seals off all evaporation, a balled tree may be moved safely. The process is expensive but worthwhile in some instances.

This information is presented to improve the homeowner's knowledge of moving small trees on his own; to increase his understanding of the relative economy in moving large trees despite the hazards and immense equipment involved; to augment his recognizing competency and reliability in tree service.

EVERGREENS

Use twine to tie together the branches of upright evergreens in order to prevent them from spreading and breaking under heavy snows. If you are trying some of the less hardy evergreens, a screening of burlap will cut down on wind desiccation and will screen off burning winter sun. Although we have been blessed with ample moisture so far this year, you may need to water your evergreens if December turns out to be a dry and open month.

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APPENDIX

CONIFERS AT GLENMORE

ABIES

- A. concolor (any seedling or any clone rates at least (2).)
- A. concolor clones: Blue, Buffalo, Dense, Glenmore (1), Green, Hill Blue, Hill Pyramid, Marshall (1), New Mexico, Peacock, Violacea (1), Wyoming.
- A. holophylla, A. homolepis, A. koreana, A. lasiocarpa, A. lasiocarpa clone Dwarf, A. 1. arizonica clones Rochester (3) and Hill (3).

CHAMAECYPARIS

- C. nootkatensis clone Glenmore (3), C. obtusa nana, C. pisifera.

JUNIPERUS

- J. chinensis clones: Ames (2), aurea, blaauwi, Expansa, globosa (2), Hetzi (3), Hillbush, Iowa, Maney (1), Pfitzeriana (1), Pfitzeriana aurea, Pfitzeriana Blue (1), Pfitzeriana Compact, Pfitzeriana Silver Blue, Robusta, Sargenti Blue (2), Sargenti Green (1), Shoosmith, Storey, Teas, variegata.
- J. communis cracovia, J. c. clone Kohankie, J. c. saxatilis.
- J. c. saxatilis clones: Dense, Glenmore, Holly, Will.
- J. Deppeana pachyplaea, J. horizontalis.
- J. horizontalis clones: Admirabilis, alpina, Bar Harbor (2), Blue Wilton (1), Compact Andorra, Douglasii (2), Filicinus (3), Glauca, glomerata, Glenmore, Green Bar Harbor, McCoy No. 1, McCoy No. 2 (2), Marshall (Black Hills) (2), Petraeus, plumosa (3), Pulchellus (1), Subglaucous, Walter, Will.
- J. monosperma (2), J. m. clone Glenmore, J. occidentalis clones glauca (3), J. procumbens, J. p. nana (3), J. sabina clones: Arcadia (3), Broadmoor (1), Buffalo (1), Glenmore, Glenmore Tamarix, Scandia, tamariscifolia (1), Von Ehron (2).
- J. scopulorum.
- J. scopulorum clones: Alba, Big Blue, Blue Bush, Blue Haven (2), Chandler Silver, Cologreen, Communis Type (1), Compact Dewdrop, Compact Pathfinder, Cone, Crawford, Cupressifolia erecta, Dewdrop (3) Emerald, Erecta glauca, Fain, Fain variegated, Funalis, Garee, Glauca compacta, Glauca Erecta, Glenmore Globe, Glenmore Green, Glenmore Queen, Glenmore Weeping, Globe, Gracilis, Gray Gleam (Pat. No. 848) (1), Green King, Hall Special, Hall Sport (1), Hilborn Globe (3), Holman Blue, Holman Green, Horizontalis (Hill Silver), Kenyon, Lake-wood, MacFarland (2), Madorra (3),

Marshall, McCoy, Moffet (2), Montana, Monument, Northern Beauty, Park, Pathfinder (3), P. G. Green, Salina, Salome Blue, Select Blue, Silver Beauty, Silver Cord (3), Silver Glow (3), Sneedi, Sterling Dwarf, Sutherland (3), Tabletop (2), Tepee, Tolleson Weeping, Victory, Weiri, Welchi, Whites Silver King (1), Wyoming.

- J. shepardii torulosa aureo-variegata (J. chinensis torulosa aurea variegata), J. sphaerica Keteleeri (2), (J. chinensis Keteleeri), J. squamata, J. squamata Meyeri, J. squamata clones Parsoni and Variegata, J. utahensis (3), J. u. clones Buffalo and Glenmore.
- J. virginiana clones: Bluecoast, Burkii, Canaerti (1), DeForest Green (3), elegantissima, globosa (1), Hilli (1), Hydrogreen, Kosteri, Nevin Blue, Nova, Platte River (a natural hybrid, not a clone), Plume Koster, Schottii, Triomphe D'Angers.

PICEA

Picea abies clones Arctic and Sherwood, P. asperata, P. Engelmanni, P. Engelmanni clones Blue, Loveland Dwarf and microphylla, P. glauca, P. glauca albertiana, P. glauca conica (3), P. g. nana (2), P. mariana, P. omorika, P. orientalis aurea, P. pungens (most well-formed seedlings or clones rank at least (3)), P. pungens clones: argentea (Kosteri) (1), Arnold Dwarf (Hunnewelliana?) (1), Buffalo, Conifer Weeping, Glenmore, Glenmore Golden, Green, Hess Dwarf (1), Moerheimi (1), Turkey Creek.

P. Wilsoni.

PINUS

P. aristata (2), P. Bungeana, P. cembra (3), P. cembroides, P. c. edulis (3), and P.c.e. clone Fort Collins, P. contorta, P. contorta lalifolia and P. c. 1. clone Dwarf, P. densiflora umbraculifera, P. flexilis (2) and P. flexilis clones Glenmore Pyramid (often called Glenmore Dwarf) and Glenmore Silver (1), P. flexilis reflexa, P. Griffithii, P. Heldreichii, P. koraiensis, P. peuce (3), P. ponderosa pendula, P. ponderosa scopulorum (3) and clone P.p.s. Dwarf, P. resinosa, P. sylvestris and P.s. clones argentea, fastigiata (2) and Watereri (3).

PSEUDOTSUGA

Pseudotsuga taxifolia glauca and P.t.g. clones: compacta (3), Densata, Glenmore Blue, Glenmore Compact, Hill Blue (2), Honnen, Marshall (2), pendula, pumila (2), Pyramidata (3), viridis.

TAXUS (Shade Only)

Taxus brevifolia, T. cuspidata densa (3), P. c. nana.

THUJA (Shade Only)

Thuja occidentalis clones Dark Green (3), Fairfax, Glenmore Dwarf, Glenmore Pyramid, Hetz Midget (2), robusta (Wareana) (3).

TSUGA CANADENSIS (Shade Only)

DECIDUOUS TREES AND SHRUBS AND BROADLEAF EVERGREENS AT GLENMORE

Acer glabrum, A. grandidentatum, A. Negundo, Alnus tenuifolia, Amelanchier alnifolia, Amorpha brachycarpa, A. canescens, A. fruticosa, A. nana, Arctostaphylos patula, A. Uva-ursi, Betula occidentalis (B. fontinalis), B. glandulosa, Celtis occidentalis, Cercocarpus montanus (C. parvifolius), Chrysothamnus graveolens, Clematis ligusticifolia, C. orientalis, Cornus Baileyi, C. stolonifera coloradensis, Crataegus cernis, Elaeagnus commutata (E. argentea), Forestiera neomexicana, Holodiscus dumosus, Humulus lupulus, Jamesia americana, Lonicera involucrata, Mahonia Aquifolium, M.

haematocarpa, M. nervosa, M. repens, Mamillaria vivipara, Opuntia fragilis, Pachistima Myrsinites, Parthenocissus quinquefolia, Physocarpus monogynus, P. opulifolius nanus, Populus acuminatus clone Glenmore, P. Andrewesii, P. angustifolia, P. clone Buffalo, P. clone Roberts, P. Sargentii, P. Tacamahacca (P. balsamifera), P. tremuloides, P. Wizlizeni, Potentilla fruticosa, Prunus americana, P. Besseyi, P. virginiana melanocarpa, P. virginiana melanocarpa clone Yellow Fruit, P. pennsylvanica, P. tenella (P. nana), P. tomentosa, Ptelia trifoliata, Purshia tridentata, Quercus Gambellii, Rhus glabra cismontana, R. Rydbergii, R. trilobata, Ribes aureum, R. cereum, R. setosum (R. Saximontanum), Robinia luxurians, Rosa Sayi, Rubus deliciosus, R. deliciosus clone Double, R. spectabilis, R. idaeus strigosus, Salix amygdaloides, S. alba vitellina (Salix aurea), S. exigua, S. irrorata, Sambucus canadensis, S. melanocarpa, Shepherdia argentea, S. canadensis, Symphoricarpos oreophilus, Tamarix gallica, Ulnus americana, U. americana pendula, Viburnum edule (V. pauciflorum), Yucca baccata, Yucca glauca.



FOR THE BIRDS

While many of our birds have gone south for the winter, we find that many have taken up winter quarters here. When the weather is good, they seem to forage pretty well for themselves, but when snow covers the ground they are often hard pressed for food. Set up a bird feeding station in your yard and enjoy the antics of the different feathered personalities who come to take advantage of your winter hospitality. Some of the foods recommended for such a feeding station are: suet and fatty trimmings from meat; seeds of sunflower, pumpkin, millet, rye, barley, wheat, and numerous weed seeds. Most of the garden shops now carry mixed seeds for wild birds. In addition bread crumbs, popcorn, and nuts are welcome tidbits for the birds. Once you start a feeding station keep it filled. Birds learn to rely on finding food there and will suffer when you neglect it.

One word in regard to the weather, if it should stay dry for any long period of time, 3 to 4 weeks, get out the hose and give everything, particularly the evergreens, a good soaking.

Merry Christmas and a Happy New Year—

—PAT.

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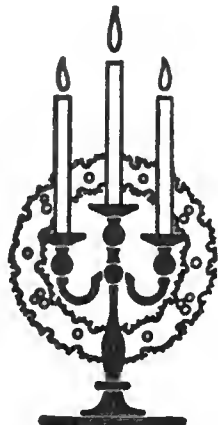
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